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Summary of Fall 1989 Adult and Juvenile Coho Salmon Sampling Operations on the Lachmach River, British Columbia

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ABSTRACT

Finnegan, B. and D. Davies. 1991. Summary of fall 1989 adult and juvenile coho salmon sampling operations on the Lachmach River, British Columbia. Can. Data Rep. Fish. Aquat. Sci. 830: 55 p.

A welded aluminum counting fence was used to capture adult coho on the Lachmach River between Sept. 4 and Nov. 15 1989. Totals of 290 large adult and 150 jack coho was trapped. Total escapement was estimated to have been 849 (599 large and 250 jack coho). Of the 290 large coho sampled, 69 (23.8%) were adipose fin clipped. Of the 150 jacks sampled 87, (58%) were adipose fin clipped. Totals of 1468 pink salmon, 54 chum salmon, 9 rainbow trout, and 804 Dolly Varden char was also captured at the fence.

The counting fence was topped by water ten times over periods varying in duration from 2 to 36 hours. Estimates of the numbers of fish moving over the fence during these periods were made.

Radio tags were applied to 53 large coho. Tags were tracked daily from a road adjacent to the stream and located weekly during stream walks.

A total of 2,777 juvenile coho were marked at seven sites during late August and September. A total of 2,129 fish were recaptured at 12 sites between Oct. 30 and Nov. 10. Of these 237 were marked. All juvenile movement was downstream and 75% of the marked fish recovered had not moved.

RÉSUMÉ

Finnegan, B. and D.Davies. 1991. Summary of fall 1989 adult and juvenile coho salmon sampling operations on the Lachmach River, British Columbia. Can. Data Rep. Fish. Aquat. Sci. 830: 55 p.

Une barrière de dénombrement en aluminium soudé a été utilisée pour capturer des saumons cohos adultes dans la rivière Lachmach, entre le 4 septembre et le 15 novembre 1989. Un total de 290 adultes de grande taille et de 150 juvéniles mâles à maturité précoce a été capturé. D'après les estimations, l'échappée totale aurait été de 849 (599 cohos de grande taille et 250 juvéniles mâles à maturité précoce). On a coupé la nageoire adipeuse à 69 (23,8%) des 290 cohos de grande taille échantillonnés, et à 87 (58%) des 150 junéniles mâles à maturité précoce. Au niveau de la barrière, on a également capturé un total de 1 468 saumons roses, 54 saumons quinnats, 9 truites arc-en-ciel et 804 Dolly Varden.

La barrière de dénombrement a été recouverte d'eau dix fois pendant des périodes de 2 à 36 heures. On a estimé le nombre de poissons qui est passé par dessus la barrière pendant ces périodes.

Des étiquettes radio-émettrices ont été insérées chez 53 saumons cohos de grande taille. On a pu suivre les poissons étiquetés tous les jours à partir d'une route adjacente au cours d'eau, et ils ont été localisées toutes les semaines pendant des promenades le long du cours d'eau.

Un total de 2 777 cohos juvéniles ont été marqués à sept endroits à la fin d'août et en septembre. Un total de 2 129 poissons ont été recapturés à 12 endroits entre le 30 octobre et le 10 novembre. De ce nombre, 237 étaient marqués. Tous les déplacements des juvéniles se sont effectués en aval, et 75% des poissons marqués récupérés ne s'étaient pas déplacés.

INTRODUCTION

The Lachmach River Project is part of the Coho Salmon Research Program which was initiated in response to the Canada U.S. Pacific Salmon Treaty. The program obtains information on the biology and productivity of coho salmon (Oncorhynchus kisutch) stocks in British Columbia. The Lachmach River Project was set up in the spring of 1987 to obtain information on northern B.C. coho salmon stocks.

The Lachmach River is a small coastal stream approximately 8 km in length. It is located 23 km east of Prince Rupert, B.C., at the head of Work Channel (Fig. 1). It drains a small (41.3 km^2) watershed typified by steep mountainous sides. The western slope of the watershed was clearcut logged during the 1970's and early 1980's. The river is characterized by sections of moderate gradient in the lower 2 km and areas of riverine ponds in the middle and upper reaches. It supports populations of coho salmon (Oncorhynchus kisutch), pink salmon (Oncorhynchus gorbuscha), chum salmon (Oncorhynchus keta), steelhead trout (Oncorhynchus mykiss), cutthroat trout (Oncorhynchus clarki clarki), Dolly Varden char (Salvelinus malma), freshwater sculpins (Cottus sp.) and three spined stickleback (Gasterosteus aculeatus).

The data presented here are the results of the adult salmon counting fence operations, coho sampling, and adult coho radio tracking operations on the Lachmach River in the fall of 1989.

METHODS

ADULTS

A welded aluminum adult fence designed by B. Finnegan (Pacific Biological Station, Nanaimo, B.C.) was installed in the late summer of 1989 on a permanent cedar fence deck located near the mouth of the Lachmach River.

The fence consists of nineteen A-frames spaced 6' 1" apart. Each A-frame is made from 4 x 3 inch aluminum I beam. These sit on the fence deck at a 39^0 angle. This angle was used to maximize screen area within the constraints of the fence deck. The A-frames are tied together with 3 x 2 inch H beam and 3/8 x 3 inch flat bar. These cross pieces serve as supports for the fence screens (Appendix A).

Each screen panel consists of 10 ft x 3 ft sections of 1/4 x 2 inch aluminum floor forge grating. These panels rest against the H beam and flat bar cross pieces and the I beam flange of the A-frame. Complete plans for this structure can be obtained from B. Finnegan, Pacific Biological Station, Nanaimo, B. C., V9R 5K6.

All fish captured at the fence were identified, counted, and observations were made as to their general condition. All coho captured in the trap were netted out and sampled in a small shed located adjacent to the fence. Sampling consisted of taking measurements of fork length and weight, scale samples for age analysis, and making observations of condition.

A fish was classified as: silver, if it showed no spawning colour; green if it showed some coloration but eggs or sperm could not be forcibly expelled from them; mature if it was strongly coloured and eggs or sperm could be expelled with some force; ripe if it was coloured and readily expelled eggs or sperm; spawned if it was spent.

All coho were tagged with numbered yellow Floy anchor tags (model FD-68b) and marked with opercular and caudal fin punches. Model FRT-4 radio transmitters (Lotek Engineering Ltd.) were placed in the stomach cavities of 53 adult coho. The 17 mm wide by 60 mm long tags were lubricated with glycerine and inserted into the stomach using a 15 mm rigid plastic tube. Each tag was wrapped with orange and green flagging tape prior to insertion to increase their visibility and to aid in recovery.

Detailed morphometric measurements were taken from 43 of the radio tagged fish (Table 11). These fish were anaesthetized with 2-phenoxyethanol and the following measurements were taken:

1. fork length;
2. weight;
3. anal fin length;
4. length of the base of the anal fin;
5. length of the base of the dorsal fin;
6. distance between the insertion of the pelvic fin to the insertion of the anal fin;
7. distance between the insertion of the anal fin to the minimum caudal peduncle point;
8. depth of the caudal peduncle;
9. end of the maxillary to the insertion of the pectoral fin;
10. distance between the insertion of the pectoral to the insertion of the pelvic;

After being sampled these fish were radio tagged and allowed to fully recover in a small holding tank before being released.

The locations and movements of radio tagged fish were monitored using a programmable scanning radio receiver (Lotek Engineering Ltd.). General fish locations and movements were recorded daily from 16 sites located on the road adjacent to the river. More precise locations were determined during weekly stream walks. These stream walks were conducted to determine general fish movements and to locate coho holding and spawning areas.

Fecundity estimates were made from a sample of 4 adult coho females. Egg skeins were removed and weighed. Then three subsamples of 100 eggs each were weighed. The average weight of the subsample was multiplied by the total skein weight to obtain an estimate of total egg numbers.

All coho carcasses found on the fence, in the trap or along the river were checked for a missing adipose fin. Heads were removed from any carcass without an adipose fin and preserved for coded wire tag analysis.

Fence maintenance consisted of periodic raking and brushing of the fence panels to remove leaves and other debris. During periods of heavy rainfall it was found that the fence needed to be raked continuously to prevent the buildup of debris from backing up the water to a point where the fence was topped. Other fence maintenance tasks included periodic inspections to check for fish "tightness", and minor improvements to the fence walkway.

Environmental information was collected at the fence site. Precipitation was measured using a 127 mm capacity rain gauge. Air temperatures were measured with a minimum-maximum thermometer and water temperatures were measured using a hand held alcohol thermometer.

JUVENILES

Juvenile coho were captured for marking in 7 areas in August and September (Table 9). Gee traps baited with salted salmon roe were used at all sites. Soak times varied from 20 minutes to 24 hours.

Before sampling all fish were anaesthetized with 2-phenoxyethanol and sorted by species. All coho were measured and clipped with a mark unique to the sampling site (Table 9). All other species were counted and released.

Trapping for the purpose of recovering marked juveniles took place between Oct. 30 and Nov. 10 after the first series of fall freshets. Gee traps baited with salted roe were used at all 12 sites. The mark recovery sites included the original 7 marking areas, one additional mainstem area and four off channel areas (Table 10). All fish captured were anaesthetized with 2-phenoxyethanol and sorted by species. All coho were examined for marks, allowed to recover and released. These fish were not marked before release. All other species were counted, allowed to recover and released.

RESULTS

ADULTS

The total coho escapement to the Lachmach River was estimated to be 849 fish (Table 1). Of these, 599 (71%) were adult coho and 250 (29%) were jack coho. Of the 290 adult coho sampled, 69 (23.8%) were adipose fin clipped. Of the 150 jacks sampled 87 (58%) were adipose fin clipped. Over

80% of the coho had entered the river by September 21 and 57% of the run passed the fence during one freshet on Sept. 18 and 19.

The fence was operational from Sept. 4 until Nov. 6 with periods in between in which water topped the fence. It was estimated by visual counts on stream walks that approximately 75 fish (50 adults and 25 jacks) had entered the system before the fence was installed. Most of the coho passed the fence during periods of high precipitation (Fig. 3).

A total of 171.5 mm of rain fell during the first major storm of the season from Sept. 18 to Sept. 21. Over this period at least 476 coho, or 56% of the total coho escapement entered the river. During this period water rose above the fence allowing fish to jump over it for a 34 hour period. When the water first topped the fence at 0300 hours on Sept. 19 periodic visual counts of fence jumpers started. Coho were first observed jumping over the fence at 0830 on Sept. 19 and a total of 152 adults and 34 jacks were counted. Some of these fish were dipnetted as they jumped over the fence and were sampled. The hourly rate of fence jumpers varied during this flood event from a high of 40 during the mid-afternoon of Sept. 19 to a low of one by late afternoon of the same day. Visual counts were continued until 2030 Sept. 19 when no fence jumpers had been observed for 3.5 hours. Visual counts commenced at 0600 hours on Sept. 20 and continued until the water level dropped below the top of the fence at 1300 hours on Sept. 20 during which time no fish were seen jumping the fence.

During the second freshet on Sept. 28 and 29, a total of 58 mm of rain fell and the fence was topped by water from midnight on Sept. 28 until 0630 hours on Sept. 29. No fish were observed jumping the fence, but it was estimated that approximately 50 adult coho and 25 jacks passed the fence uncounted during this period. These estimates are based on a visual estimate of the number of coho holding below the fence on the afternoon of Sept. 28 and the rate of fish movement through the fence before it was topped.

Throughout the course of the fence operation the fence was topped by water during eight other periods varying in duration from 2 to 13 hours. Since very few coho passed through the fence prior to and subsequent to each of these floods and no coho were observed below the fence prior to each of these floods it was assumed that very few, if any, coho passed the fence uncounted during these freshets.

The mean length and weight of adult female coho was 67.5 cm and 3.71 kg. The mean length and weight of large adult male coho was 63.9 cm and 3.88 kg (Table 2). The mean length of jack coho was 31.3 cm (Table 2). Attempts were made to separate the sexes of the adult coho sampled but the difficulty in correctly sexing silver coho made this data unreliable. The age composition separated by sex is shown in Table 5. Only lengths were taken from most jack coho in an attempt to reduce scale loss from handling. During the freshet of Sept. 18 and 19, the rate at which fish entered the trap and the resultant fish densities in the trap plus a lack of manpower necessitated releasing some coho unsampled.

Heads were removed from a total of 4 adipose fin clipped adult coho carcasses and 6 adipose fin clipped jack coho carcasses. Coded wire tags were recovered and read from 3 of the adult heads and all 6 of the jack heads, one adult head had no tag. All three of the tags from the adults showed that they were tagged as large smolts in May 1988 with the tag code 08-24-58. The jack coho were all tagged in May of 1989 as large smolts, 5 were tagged with the tag code 08-26-48 and one was tagged with the tag code 08-26-49.

Fecundity samples were taken from four female coho (Table 6). The mean fecundity was 2849 eggs. Figure 8 gives the regression of the log fecundity versus log fork length derived from these samples.

Radio transmitters were inserted into a total of 53 adult coho. Nearly all of the radio tagged fish moved out of the pool immediately upstream of the fence the same day as they were tagged or one day after tagging. Approximately half of the radio tagged fish moved rapidly upstream to the falls at 2000 m and subsequently either slowly moved further upstream or moved both upstream and downstream. About one quarter of the radio tagged fish slowly moved upstream from the fence and scattered throughout the river while the remaining quarter stayed in the lower reaches of the river downstream of the 2000 m falls. In general, coho radio tagged in September (31 fish) tended to spread out along the river more than the October tagged fish (21 fish) which tended to end their upstream migration at the 2000 m falls or downstream of them. Only 5 radio tagged fish reached a point upstream of the 5000 m ponds.

Of the 53 radio transmitters applied, 35 were recovered, 14 were either not recovered or ceased to operate and 4 were in live fish at the end of sampling program. Table 8 gives a summary of radio tracking data.

Evidence of redd construction was first observed in the lower reaches of the river at 500 m during a stream walk on Oct. 14. Numerous redds were observed in the lower reaches on Oct. 20, but none were observed upstream. Evidence of spawning upstream of the 500 m area was first observed in late October at the 2000 m falls. Upstream of the 2000 m falls, spawning appeared to commence near the end of October and was continuing at the end of the study in mid November.

Other species caught at the Lachmach River fence in 1989 included 1468 pink salmon (Onchorhynchus gorbuscha), 54 chum salmon (Onchorhynchus keta), 9 rainbow trout (Onchorhynchus mykiss), and 804 Dolly Varden char (Salvelinus malma), (Table 7 and Fig. 4).

Pink salmon first entered the river in mid August and continued to enter and spawn throughout September. Dolly Varden passed through the fence in low numbers during September but their numbers rose rapidly at the end of September and the beginning of October. Dolly Varden continued to enter the system in low numbers throughout the remainder of the study period. Chum salmon entered the river in low numbers from mid September to mid October.

Total precipitation between Sept. 10 and Nov. 12 was 1167.5 mm (Fig. 5). The peak daily precipitation occurred on Sept. 19 when 93.5 mm fell

in a 24 hour period. Peak weekly precipitation occurred between Nov. 2 and Nov. 8 when 353 mm fell. Daily air and water temperatures gradually decreased during the study period (Figs. 6 and 7).

JUVENILES

A total of 2,777 juvenile coho were marked at seven sites during late August and September (Table 9). A total of 2,129 juvenile coho were recaptured at 12 sites between Oct. 30 and Nov. 10. Of these 237 had been clipped (Table 10). All fish movement was downstream. Of the 237 marked fish recovered 178 (75%) had not left the area in which they were marked. One fish marked at 7000 m was recaptured at 500 m, one fish marked at 5000 m was recovered in the 3390 m backchannel, one 5000 m fish was recovered at 4500 m, fish marked at 4500 m were recovered at 500 m, 2600 m and 3820 m, fish marked at 3820 were recovered at 3390 m, 2000 m and 500 m, fish marked at 2600 m were recovered at 2000 m, fish marked at 2000 m were recovered at 500 m and 0 m (fence site), and one fish marked at 500 m was recovered in the 500 m backchannel area.

Figs. 9 - 16 give the length frequencies for juvenile coho by area.

ACKNOWLEDGEMENTS

All field operations were carried out by staff employed by J. A. Taylor and Associates of Sidney, B. C.

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Table 1. Daily captures of coho from the Lachmach River fence, fall 1989.
(NOTE: Numbers in brackets indicate numbers of adipose clipped fish)

Date	No. of Adults	Cumulative Total	No. of Jacks	Cumulative Total	Daily Total	Cumulative Total
BEFORE						
SEPT. 4	50	50	25	25	75	75
SEPT. 4	37 (12)	87	20 (12)	45	57	132
SEPT. 5	0	87	0	45	0	132
SEPT. 6	0	87	0	45	0	132
SEPT. 7	1 (0)	88	1 (0)	46	2	134
SEPT. 8	1 (0)	89	3 (3)	49	4	138
SEPT. 9	1 (0)	90	5 (4)	54	6	144
SEPT. 10	0	90	4 (3)	58	4	148
SEPT. 11	0	90	1 (1)	59	1	149
SEPT. 12	0	90	2 (0)	61	2	151
SEPT. 13	2 (0)	92	2 (1)	63	4	155
SEPT. 14	13 (4)	105	0	63	13	168
SEPT. 15	14 (5)	119	2 (2)	65	16	184
SEPT. 16	1 (0)	120	4 (2)	69	5	189
SEPT. 17	2 (0)	122	1 (0)	70	3	192
SEPT. 18	123 (24)	245	39 (23)	109	162	354
SEPT. 19	206 (11)[a]	451	43 (5)[a]	152	249	603
SEPT. 20	11 (3)[b]	462	15 (10)	167	26	629
SEPT. 21	20 (6)	482	19 (9)	186	39	668
SEPT. 22	1 (0)	483	2 (2)	188	3	671
SEPT. 23	3 (0)	486	6 (3)	194	9	680
SEPT. 24	3 (1)	489	1 (0)	195	4	684
SEPT. 25	1 (0)	490	2 (1)	197	3	687
SEPT. 26	1 (1)	491	1 (0)	198	2	689
SEPT. 27	2 (1)	493	0	198	2	691
SEPT. 28	53 (0)[c]	546	31 (5)[c]	229	84	775
SEPT. 29	10 (2)	556	5 (2)	234	15	790
SEPT. 30	4 (1)	560	0	234	4	794
OCT. 1	0	560	1 (1)	235	1	795
OCT. 2	0	560	0	235	0	795
OCT. 3	1 (0)	561	3 (2)	238	4	799
OCT. 4	0	561	3 (1)	241	3	802
OCT. 5	0	561	0	241	0	802
OCT. 6	1 (0)	562	0	241	1	803
OCT. 7	6 (4)	568	3 (3)	244	9	812
OCT. 8	12 (1)	580	1 (1)	245	13	825
OCT. 9	3 (1)	583	2 (1)	247	5	830
OCT. 10	0	583	0	247	0	830
OCT. 11	0	583	0	247	0	830
OCT. 12	0	583	0	247	0	830
OCT. 13	0	583	0	247	0	830
OCT. 14	1 (0)	584	0	247	1	831

Table 1. (cont.)

Date	No. of Adults	Cumulative Total	No. of Jacks	Cumulative Total	Daily Total	Cumulative Total
OCT. 15	2 (0)	586	0	247	2	833
OCT. 16	0	586	0	247	0	833
OCT. 17	1 (0)	587	0	247	1	834
OCT. 18	6 (1)	593	2 (0)	249	8	842
OCT. 19	3 (0)	596	0	249	3	845
OCT. 20	0	596	0	249	0	845
OCT. 21	0	596	0	249	0	845
OCT. 22	0	596	0	249	0	845
OCT. 23	0	596	0	249	0	845
OCT. 24	0	596	0	249	0	845
OCT. 25	0	596	0	249	0	845
OCT. 26	0	596	1 (0)	250	1	846
OCT. 27	0	596	0	250	0	846
OCT. 28	1 (1)	597	0	250	1	847
OCT. 29	0	597	0	250	0	847
OCT. 30	0	597	0	250	0	847
OCT. 31	0	597	0	250	0	847
NOV. 1	2 (0)	599	0	250	2	849

[a]=includes 152 adults and 34 jacks counted jumping over the fence during flood conditions, no counts of adipose fin clips were obtained.
[b]=includes 2 adults counted jumping over the fence.
[c]=includes an estimate of 50 adults and 25 jacks believed to have passed the fence uncounted during flood conditions, no counts of fin clips were obtained.

Total Estimated Number of Adult Coho	: 599
Total Number of Adult Coho Sampled	: 290
Total Number of Adipose Fin Clipped Adult Coho	: 79
Total Estimated Number of Jack Coho	: 250
Total Number of Jack Coho Sampled	: 150
Total Number of Adipose Clipped Jack Coho	: 97
Total Estimated Coho Escapement	: 849

Table 2. Adult coho sampling data from the Lachmach River, fall 1989.

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.4	55.8	2.1	M	G	N	1		1-1	21[a]	
Sept.4	39.1		J	S	Y	2		1-2	10	
Sept.4	30.1		J	S	Y	4		1-3	20	
Sept.4	28.2		J	S	Y	5		1-4	20	
Sept.4	58.8	2.75	F	S	N	6		2-1	21	
Sept.4	33.4		J	S	Y	7		2-2	20	
Sept.4	51.5	1.8	M	S	N	8		2-3	21	
Sept.4	67.7	4.3	F	S	N	9		2-4	11	
Sept.4	31.3		J	S	N	11		2-5	20	
Sept.4	64.2	3.5	F	S	N	12		2-6	21	
Sept.4	60.0	2.7	M	G	N	13		2-7	21	
Sept.4	69.5	4.7	F	S	N	14	47	2-8	21	
Sept.4	31.1		J	S	N	15		2-9	20	
Sept.4	34.0		J	S	N	16		2-10	10	
Sept.4	66.3	3.6	F	S	Y	17		3-1	99[b]	
Sept.4	31.9		J	S	Y	19		3-2	20	08-26-48
Sept.4	63.1	3.1	F	G	N	20		3-3	21	
Sept.4	60.6	2.7	F	S	N	21		3-4	21	
Sept.4	33.7		J	S	Y	22		3-5	20	
Sept.4	30.9		J	S	Y	23		3-6	20	
Sept.4	52.8	1.9	F	S	N	24		3-7	11	
Sept.4	58.1	2.8	F	S	N	25		3-8	21	
Sept.4	41.5	0.9	J	S	N	27		3-9	20	
Sept.4	65.7	3.5	F	S	Y	28		3-10	21	
Sept.4	69.2	4.7	F	S	N	29		4-1	11	
Sept.4	62.0	2.7	M	G	N	33		4-2	99	
Sept.4	65.2	3.6	F		N	36		4-3	21	
Sept.4	68.8	4.8	F	S	Y	37		4-4	21	
Sept.4	29.1		J	S	Y	38		4-5	10	
Sept.4	38.7		J	S	N	40		4-6	20	
Sept.4	64.9	3.5	M		N	41		4-7	21	
Sept.4	70.4	4.75	F	S	Y	42		4-8	11	
Sept.4	70.8	4.7	F	S	Y	43		4-9	21	
Sept.4	34.8		J	S	Y	44		4-10	20	
Sept.4	66.1		F	G	N	45		5-1	11	
Sept.4	67.3	3.95	M	S	N	46		5-2	11	
Sept.4	32.8		J	S	Y	47		5-3	10	
Sept.4	67.2	4.25	F	S	N	48		5-4	21	
Sept.4	71.7	4.9	F	S	N	49		5-5	21	
Sept.4	71.8	5.15	F	S	N	50		5-6	21	
Sept.4	70.8	5.0	M	S	Y	51		5-7	21	
Sept.4	22.1		J	S	N	52		5-8	20	
Sept.4	19.4		J	S	N	53		5-9	10	
Sept.4	63.8	3.25	M	S	Y	54		5-10	21	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.4	67.2	3.95	F	S	Y	55		6-1	21	
Sept.4	31.9		J	S	N	56		6-2	20	
Sept.4	55.8	2.25	M	S	Y	57		6-3	11	
Sept.4	64.5	3.3	M	S	N	58		6-4	99	
Sept.4	64.2	3.7	F	S	N	59		6-5	21	
Sept.4	66.5	3.6	F	G	N	60		6-6	21	
Sept.4	35.0		J	S	Y	62		6-7	20	
Sept.4	67.2	4.0	F	G	N	63		6-8	99	
Sept.4	72.0	4.95	F	S	N	64		6-9	21	
Sept.4	65.8	3.4	M	S	Y	65		6-10	21	
Sept.4	72.5	5.4	M	S	Y	67		7-1	11	
Sept.4	29.8		J		Y	69		7-2	20	
Sept.4	61.5	3.1	F		Y	71		7-3	21	
Sept.7	31.8		J	S	N	72		8-1	99	
Sept.7	72.5	4.95	M	S	N	73	30	8-2	21	
Sept.8	29.1		J	S	Y	74		8-3	20	
Sept.8	30.2		J	S	Y	75		8-4	20	
Sept.8	53.0		?		N			8-5	21	
Sept.8	31.8		J	S	Y	76		8-6	20	
Sept.9	32.6		J	S	Y	77		8-7	20	
Sept.9	26.2		J	S	Y	78		8-8	20	
Sept.9	30.6		J	S	Y	79		8-9	20	
Sept.9	66.2	3.4	M	S	N	80		8-10	99	
Sept.9	26.7		J	S	Y	81		9-1	20	
Sept.9	29.6		J	S	N	83		9-2	99	
Sept.10	27.0		J	S	Y	84		9-3	20	
Sept.10	28.4		J	S	Y			9-4	20	
Sept.10	29.6		J	S	Y	85		9-5	20	
Sept.10	26.6		J	S	N	86		10-1	20	
Sept.11	34.8		J	S	Y	87		10-2	20	
Sept.12	31.3		J	S	N	88		10-3	10	
Sept.12	29.9		J	S	N	89		10-4	20	
Sept.13	60.0	2.75	F	S	N	90		10-5	99	
Sept.13	30.5		J	S	N	91		10-6	99	
Sept.13	30.4		J	S	Y	92		10-7	20	
Sept.14	66.8	4.0	F	S	Y	93		11-1	11	
Sept.14	53.5	2.2	F	S	N	94		11-2	30	
Sept.14	68.5	3.9	M	G	Y	95		11-3	99	
Sept.14	67.7	3.7	M	G	Y	96		11-4	21	
Sept.14	67.7	4.0	F	S	N	97		11-5	21	
Sept.14	67.5	4.0	F	S	N	98		11-6	99	
Sept.14	71.0	4.4	F	S	N	99		11-7	21	
Sept.14	73.7	5.8	M	S	Y	100	36	11-8	21	
Sept.14	64.4	3.2	F	S	N	101		11-9	21	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.14	72.0	5.0	M	G	N	102		11-1	99	
Sept.14	64.3	3.7	M	G	N	103		12-1	99	
Sept.14	59.1	2.7	F	S	N	104		12-2	21	
Sept.14	47.1	1.5	M	S	N	105		12-3	11	
Sept.15	66.4	4.1	M	G	N	106		12-4	99	
Sept.15	62.5	3.4	F	G	N	107		12-5	99	
Sept.15	66.4	3.3	M	G	N	108		12-6	99	
Sept.15	60.8	2.8	M	G	N	109		12-7	21	
Sept.15	57.0	2.6	M	G	Y	110		12-8	21	
Sept.15	66.8	4.2	F	G	N	111		12-9	99	
Sept.15	69.2	4.3	F	G	Y	112		12-1	21	
Sept.15	66.6	4.2	F	S	N	113		13-1	21	
Sept.15	64.8	4.1	F	S	Y	114		13-2	21	
Sept.15	68.5	4.3	F	S	Y	115		13-3	21	
Sept.15	66.5	4.0	F	S	N	116		13-4	99	
Sept.15	53.1	1.9	F	G	N	117		13-5	21	
Sept.15	55.1	2.1	M	G	N	119		13-6	21	
Sept.15	55.1	2.0	F	S	Y	120		13-7	99	
Sept.15	33.0	0.6	J	S	Y	121		13-8	20	
Sept.15	29.4	0.5	J	S	Y	122		13-9	20	
Sept.16	62.7	2.8	F	S	N	123		13-1	21	
Sept.16	23.2		J	S	Y	124		14-1	10	
Sept.16	31.2		J	S	Y	125		14-2	10	
Sept.16	34.2		J	S	N	126		14-3	99	
Sept.17	29.0		J	S	N	127		14-4	99	
Sept.17	73.6	4.8	M	G	N	128		14-5	21	
Sept.17	77.6	6.6	M	S	N	129		14-6	21	
Sept.18	33.0		J	S	N	130		14-7	20	
Sept.18	65.6	4.0	F	G	N	131		14-8	21	
Sept.18	55.0	2.2	M		N			14-9	99	
Sept.18	64.0	3.3	M	G	Y	133		14-1	99	
Sept.18	65.0	4.1	F	G	N	135		15-1	99	
Sept.18	61.0	3.0	M	G	Y	136		15-2	21	
Sept.18	34.8		J	S	N	137		15-3	20	
Sept.18	63.6	3.5	F	S	Y	138		15-4	99	
Sept.18	66.0	2.5	M	S	Y	139		15-5	21	
Sept.18	52.6	1.6	F	G	N	140		15-6	21	
Sept.18	54.7	2.1	M	G	Y	141		15-7	99	
Sept.18	54.9	2.3	M	G	N				99	
Sept.18	27.9		J	S	Y	142		15-8	99	
Sept.18	65.0	3.6	F	G	N	143	3	15-9	99	
Sept.18	65.2	4.0	M	S	N	144		15-1	99	
Sept.18	64.5	4.1	F	G	N	145	4	16-1	99	
Sept.18	57.8	2.7	F	G	Y	146		16-2	11	
Sept.18	62.2	3.3	M	G	N	147		16-3	11	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.18	30.1		J		Y	148		16-4	10	
Sept.18	62.1	3.2	F	G	N	149		16-5	21	
Sept.18	67.5	4.4	F	G	N	150	5	16-6	21	
Sept.18	64.0	3.1	M	G	N	151		16-7	21	
Sept.18	67.1	4.1	F	G	N	153		16-8	21	
Sept.18	64.8	4.0	F	G	N	154		16-9	21	
Sept.18	63.8	3.7	F	G	N	155		16-1	99	
Sept.18	62.8	3.7	M	G	N	156		17-1	99	
Sept.18	67.7	4.6	F	S	N	157	6	17-2	99	
Sept.18	29.5		J	G	N	274				
Sept.18	76.0		M	G	N	275				
Sept.18	68.3		M	G	N	276				
Sept.18	37.0		J	S	N	277				
Sept.18	34.2		J	S	N	278				
Sept.18	63.4		M	G	N	279				
Sept.18	70.8		M	G	N	280				
Sept.18	68.9	4.6	F	G	Y	281	9			
Sept.18	64.7		M	G	N	282				
Sept.18	29.7		J	S	N	283				
Sept.18	65.8		F		Y	284				
Sept.18	69.5		F	G	N	285				
Sept.18	32.5		J		Y	286				
Sept.18	52.7		M	G	N	287				
Sept.18	30.3		J	S	Y	288				
Sept.18	31.7		J	S	Y	289				08-26-48
Sept.18	31.5		J	S	N	290				
Sept.18			F	G	N	291				
Sept.18			M	G	N	292				
Sept.18			M	G	N	293				
Sept.18			M	G	N	294				
Sept.18	39.8		J	S	Y	295				
Sept.18			M	G	Y	296				
Sept.18			M	G	N	297				
Sept.18			M	G	N	298				
Sept.18			J	S	Y	299				
Sept.18	69.4		M	G	Y	245				
Sept.18	56.4		M	S	N	246				
Sept.18	59.1		M	G	N	247				
Sept.18	30.3		J	S	Y	248				
Sept.18	60.0		M	G	Y	249				
Sept.18	61.7		F	G	N	250				
Sept.18	30.2		J	S	Y	251				
Sept.18	64.5		F	G	N	252				
Sept.18	68.3		F	G	Y	253				
Sept.18	56.0		M	G	N	254				

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.18	29.4		J	S	N	255				
Sept.18	61.3		F	G	N	256				
Sept.18	28.9		J	S	Y	257				
Sept.18	33.7		J	S	Y	258				
Sept.18	58.6		M	G	N	260				
Sept.18	65.7		M	G	N	261				
Sept.18	33.6		J	S	Y					
Sept.18	63.9		F	G	N	263				
Sept.18	59.9		M	G	N	265				
Sept.18	67.6		F	G	Y	266				
Sept.18	63.3		F	G	N	267				
Sept.18	66.4		F	G	Y	268				
Sept.18	58.8		M	G	N	270				
Sept.18	61.3		M	G	N	271				
Sept.18	66.4		F	G	N	272				
Sept.18	65.7		M	G	N	273				
Sept.18	66.1	4.1	F	G	N	158		17-3	21	
Sept.18	53.8	2.7	M	G	N	159		17-4	11	
Sept.18	68.7	4.4	F	G	N	160		17-5	99	
Sept.18			F		N	161				
Sept.18			F		N	162				
Sept.18			F		N	163				
Sept.18			M		N	164				
Sept.18	70.2	5.0	M	G	N	166		17-6	21	
Sept.18	75.2	6.2	F		N	167				
Sept.18	68.3	4.3	M	G	Y	168		17-7	99	
Sept.18	48.2	1.8	M	G	Y	169		17-8	11	
Sept.18			F		N	170				
Sept.18			J		Y	171				
Sept.18			M	G	N	172				
Sept.18			M	G	N	173				
Sept.18	70.3	5.2	M	G	N	175		17-9	21	
Sept.18			J	S	Y	176				
Sept.18			J	S	N	177				
Sept.18			J	S	N	178				
Sept.18			M	G	N	179				
Sept.18	70.4	4.7	M	G	N	180		17-1		
Sept.18	65.1	4.2	F	G	N	181		18-1	99	
Sept.18	38.2		J	S	N	182		18-2	99	
Sept.18	28.3		J	S	Y	184		18-3	99	
Sept.18	56.0	2.8	F	G	N	185		18-4	99	
Sept.18	60.3	3.2	M	G	N	186		18-5	99	
Sept.18	67.0	3.9	F	G	N	187		18-6	21	
Sept.18	31.8		J	S	Y	188		18-7	20	
Sept.18	65.1	4.1	M	G	Y	189		18-8	21	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.18	59.1	3.1	M	G	Y	190		18-9	21	
Sept.18	68.7	4.9	F	G	N	191		18-1	11	
Sept.18	66.7	4.6	F	G	Y	192		19-1	99	
Sept.18	68.2	5.0	F	G	N	193		19-2	99	
Sept.18	23.7		J	G	Y	194		19-3	99	
Sept.18	30.2		J	G	Y	195		19-4	10	
Sept.18	66.2	3.7	F	G	N	196		19-5	99	
Sept.18	70.6	4.4	M	G	N	197		19-6	99	
Sept.18	30.2		J	G	Y	199		19-7	99	
Sept.18	64.9	4.0	M	G	N	200		19-8	99	
Sept.18	29.9		J	S	Y	201		19-9	99	
Sept.18	31.7		J	S	Y	202		19-1	20	
Sept.18	63.8	3.4	F	G	N	204		20-1	21	
Sept.18	66.0	3.8	M	G	N	205		20-2	21	
Sept.18	29.0		J	S	N	206		20-3	20	
Sept.18	71.7	4.75	F	G	N	207		20-4	99	
Sept.18	70.1	4.3	F	S	N	208		32-9	21	
Sept.18	53.4	2.0	M	G	N	210		20-6	99	
Sept.18	66.5	3.2	M	G	N	211		20-7	21	
Sept.18	62.1	3.0	M	G	N	214		20-8	21	
Sept.18	64.0	3.3	F	G	N	215		20-9	21	
Sept.18	61.0	3.4	F	S	N	216		20-1	99	
Sept.18	75.7	5.25	M	S	N	218	7	21-2	21	
Sept.18	35.0		J	S	Y	217		21-1	20	
Sept.18	66.4		F	G	N	219				
Sept.18	63.9		F	G	Y	220				
Sept.18	53.0		M	G	N	221				
Sept.18	58.4		M	G	N	222				
Sept.18	31.8		J	S	N	223				
Sept.18	65.5		F	S	N	224				
Sept.18	71.0		F	S	N	226				
Sept.18	54.1		F	G	Y	227				
Sept.18	66.8	3.9	F	S	N	228	14	21-3	99	
Sept.18	69.2		M	G	N	229				
Sept.18	72.1		F	G	N	230				
Sept.18	28.7		J		N	231				
Sept.18	62.3		M		N	232				
Sept.18	67.8		M		N	233				
Sept.18	61.8		M		N	234				
Sept.18	71.0		M		Y	235				
Sept.18	66.9	3.75	F	G	Y	236	13	21-4	99	08-24-58
Sept.18	66.8		F	G	N	237				
Sept.18	69.1		M	G	N	238				
Sept.18	64.3		F	G	N	239				
Sept.18	60.4		M	G	N	240				

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.18	68.1		M	G	N	241				
Sept.18	70.8		F	G	Y	242				
Sept.18	62.0		M	G	N	243				
Sept.18	30.2		J		N	244				
Sept.19			F		Y	300				
Sept.19	32.6		J	S	Y	302				
Sept.19			M	G	N	303				
Sept.19	60.0		M	G	Y	304		31-1	21	NO PIN
Sept.19			M	G	N	306				
Sept.19			J	S	Y	308				
Sept.19			M	G	N	309				
Sept.19			F	G	N	310				
Sept.19			J	S	Y	311				
Sept.19			M	G	Y	312				
Sept.19			M	G	N	313				
Sept.19			F	G	N	314				
Sept.19			M	G	N	315				
Sept.19			J	S	N	316				
Sept.19			M	G	Y	318				
Sept.19			F	G	Y	319				
Sept.19			M	G	N	321				
Sept.19			M	G	N	322				
Sept.19			F	G	N	323				
Sept.19			M	G	N	324				
Sept.19			M	G	N	325				
Sept.19			M	G	N	326				
Sept.19			M	G	N	327				
Sept.19			F	G	N	328				
Sept.19			J	S	N	329				
Sept.19			M	G	N	330				
Sept.19			M	G	N	331				
Sept.19			F	G	N	332				
Sept.19			M	G	Y	333				
Sept.19			J	S	Y	334				
Sept.19			M	G	N	335				
Sept.19			M	G	Y	336				
Sept.19			M	G	N	338				
Sept.19			F	G	N	340				
Sept.19			F	G	N	341				
Sept.19			F	G	N	342				
Sept.19			M	G	N	343				
Sept.19			M	G	Y	344				
Sept.19			M	G	N	345				
Sept.19			M	G	Y	346				
Sept.19	65.4	3.7	M	M	N					

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.19	52.0	2.6	M	G	N	347		24-1	99	
Sept.19	66.9	4.2	F	G	N	349		24-2	21	
Sept.19	64.2	3.5	F	G	N	350	10	24-3	99	
Sept.19	65.5	3.7	F	G	N	351	8	24-4	99	
Sept.19	67.9	3.5	M	G	N	352	12	24-5	11	
Sept.19	67.7	4.0	M	G	N	353	15	24-6	31	
Sept.19	35.0		J	S	N	354	16	24-7	99	
Sept.19	58.7	1.4	M	G	N	355		24-8	21	
Sept.19	31.2		J	S	Y	356		24-9	99	
Sept.19	67.2		F	M	N					
Sept.19	61.8		F	M	Y					
Sept.19	65.8		F	M	Y					
Sept.19	63.2		F	M	N					
Sept.19	63.7		M	M	N					
Sept.19	61.[illegible]		F	M	N					
Sept.19	74.0		M	M	N					
Sept.19	71.6		M	M	N					
Sept.19	68.3		M	M	N					
Sept.19	68.2		F	M	N					
Sept.19	58.0		M	M	N					
Sept.19	61.8		F	M	N					
Sept.19	26.7		J	M	N					
Sept.20	28.7		J	M	N					
Sept.20	31.8		J	M	Y					
Sept.20	30.3		J	M	Y					
Sept.20	32.2		J	M	Y					
Sept.20	29.9		J	M	Y					
Sept.20	29.4		J	M	Y					
Sept.20	27.8		J	M	Y					
Sept.20	31.7		J	M	Y					
Sept.20	31.2		J	M	N					
Sept.20	61.7		F	M	Y					
Sept.20	53.8		F	M	N					
Sept.20	71.7		F	M	N					
Sept.20	30.8		J		Y	359		25-1	20	
Sept.20	63.7	3.25	F	S	Y	360	19	25-2	21	
Sept.20	30.3		J	S	N	361		25-3	99	
Sept.20	70.2	4.65	F	G	N	362	25	25-4	99	
Sept.20	70.5	5.05	F	S	Y	363	21	25-5	21	
Sept.20	73.4	5.05	M	G	N	364	22	25-6	99	
Sept.20	36.8		J	S	Y	365		25-7	20	
Sept.20	64.9	3.15	F	S	N	366		25-8	21	
Sept.20	33.1		J	S	N	367		25-9	20	
Sept.20	30.0		J	S	N	368		25-1	99	
Sept.20	64.5	4.37	M	G	N	369		26-1	99	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.20	29.3		J	S	Y	370		26-2	99	
Sept.21	65.5	3.4	F	S	N	372		26-3	21	
Sept.21	28.8		J	S	Y	373		26-4	20	
Sept.21	39.9	0.75	J	S	N	374		26-5	20	
Sept.21	39.9	0.85	J	S	N	375		26-6	20	
Sept.21	67.7	4.35	M	G	N	376	27	26-7	21	
Sept.21	67.1	4.25	F	G	N	377	31	26-8	21	
Sept.21	39.2		J	S	N	378		26-9	20	
Sept.21	62.9	3.5	F	G	Y	379	32	26-1	99	
Sept.21	70.2	5.075	F	S	N	380	38	27-1	99	
Sept.21	56.5	1.9	M	S	Y	382		27-2	21	
Sept.21	70.8	5.05	M	G	N	383	40	27-3	99	
Sept.21	33.6		J	S	N	384		27-4	20	
Sept.21	63.7	3.3	M	S	N	385	42	27-5	11	
Sept.21	31.2		J	S	Y	388		27-6	20	
Sept.21	32.4		J	S	N	389		27-7	20	
Sept.21	31.0		J	S	Y	390		27-8	99	
Sept.21	36.1		J	S	N	391		27-9	20	
Sept.21	61.0	2.75	M	G	N	392		27-1	21	
Sept.21	36.9		J	S	Y	393		28-1	20	
Sept.21	25.8		J	M	N			28-2	20	
Sept.21	24.6		J	S	N	394		28-3	99	
Sept.21	26.7		J	S	Y	395		28-4	99	
Sept.21	66.9	4.6	F	S	Y	396	43	28-5	99	
Sept.21	28.5		J	S	Y	397		28-6	99	
Sept.21	71.0	5.43	M	G	Y	398		28-7	99	
Sept.21	65.8	3.5	F	S	Y	399		28-8	21	
Sept.21	67.9	3.7	M	G	N	400		28-9	99	
Sept.21	30.4		J	S	N	401		28-1	20	
Sept.21	66.6	4.1	F	S	Y	402		29-1	21	
Sept.21	64.4	3.15	F	G	N	403		29-2	11	
Sept.21	69.2	4.7	F	S	N	404		29-3	21	
Sept.21	28.4		J	S	Y	405		29-4	20	
Sept.21	54.2	2.2	F	S	N	406		29-5	99	
Sept.21	65.7	4.1	M	S	N	407		29-6	21	
Sept.21	65.7	4.0	M	S	N	408		29-7	11	
Sept.21	26.2		J	S	N	409		29-8	10	
Sept.21	33.1		J	S	Y	410		29-9	20	
Sept.22	32.1		J	S	Y	411		29-1	20	
Sept.22	27.6		J	S	Y	412		30-1	20	
Sept.22	74.6	4.5	M	S	N	413		30-2	11	
Sept.23	31.1		J	S	N	414		30-3	99	
Sept.23	27.0		J	S	Y	415		30-4	20	
Sept.23	32.8		J	S	N	416		30-5	20	
Sept.23	67.5	4.4	F	S	N	417		30-6	21	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Sept.23	32.4		J	S	N	418		30-7	99	
Sept.23	33.3		J	S	Y	419		30-8	99	
Sept.23	59.4	4.45	F	S	N	420		30-9	99	
Sept.23	31.5		J	S	Y	422		30-1	99	
Sept.23	73.5	5.7	F	S	N	423		31-1	99	
Sept.24	70.1	4.94	M	G	N	424		31-2	99	
Sept.24	69.5	4.5	M	S	N	425		31-3	21	
Sept.24	68.0	4.5	M	G	Y	426		31-4	99	
Sept.24	31.5		J	S	N	427		31-5	10	
Sept.25	70.6	3.68	M	M	N			31-6	99	
Sept.25	31.8		J	S	N	428				
Sept.26	32.0		J		N	430		31-7	99	
Sept.26	60.0	2.4	F	G	Y			31-8	21	
Sept.27	71.2	5.1	F	S	N	431		31-9	99	
Sept.27	61.2		F	S	Y	432				
Sept.28	65.3	3.6	M	S	N	433		32-1	21	
Sept.28	31.9		J	S	N	434				
Sept.28	36.4		J	S	Y	436		32-2	20	
Sept.28	32.2		J	S	Y	437		32-3	99	
Sept.28	32.2		J	S	Y	438		32-4	99	
Sept.28	28.3		J	S	Y	439				
Sept.28	66.0	4.4	F	S	N			32-5	21	
Sept.28	28.4		J	S	Y					
Sept.29	69.7		F	M	N			32-6	11	
Sept.29	33.3		J	G	Y	443		32-7	20	08-24-58
Sept.29	72.6	5.2	F	G	N	444		32-8	11	
Sept.29	29.7		J	S	N	445				
Sept.29	67.1	3.7	M	S	N	446		32-1	99	
Sept.29	73.9	4.9	M	G	Y	447		33-1	21	
Sept.29	44.8	1.1	M	G	Y	448		33-2	11	08-24-58
Sept.29	67.0	3.3	F	G	N	449				
Sept.29	66.6	4.1	F	G	N	450		33-3	21	
Sept.29	73.9	5.5	M	G	Y	451		33-4	99	
Sept.29	47.2	1.4	J	G	N	453		33-5	99	
Sept.29	24.0		J	S	N	454				
Sept.29	64.1	3.8	M	G	N	456		33-6	21	
Sept.29	72.8	5.1	M	G	N	457	10	33-7	21	
Sept.29	69.0	4.75	M	G	N	459	11	33-8	21	
Sept.30	66.2	3.2	M	G	N	461		33-9	21	
Sept.30	66.1	3.5	M	G	N	462	17	33-1	99	
Sept.30	63.0	3.15	F	G	Y	463	28	34-1	21	
Sept.30	60.1	2.5	F	G	N	464		34-2	21	
Oct.1	34.9		J	S	Y	465		34-3	20	
Oct.3	31.3		J	S	N	466		34-4	20	
Oct.3	35.6		J	S	Y	467		34-5	99	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Oct.3	66.7	3.85	F	S	N	468	35	34-6	21	
Oct.3	32.4		J	S	Y	469				
Oct.4	32.7		J	S	N	470				
Oct.4	31.9		J	S	N	471		34-7	20	
Oct.4	29.7		J	S	Y	472		34-8	20	
Oct.6	67.1	4.1	F	S	N	474		34-9	99	
Oct.7	64.9	3.45	F	G	N	475	37	35-1	99	
Oct.7	31.2		J	S	Y	476		35-2	20	
Oct.7	34.0		J	S	Y	479				
Oct.7	69.3	4.15	F	G	Y	480	39	35-3	99	
Oct.7	66.4	3.8	F	G	Y	481	45	35-4	99	
Oct.7	70.2	4.75	M	G	Y	482		35-5	99	
Oct.7	29.1		J	S	Y	483		35-6	10	
Oct.7	64.7	3.5	M	G	Y	484	46	35-7	99	
Oct.7	61.8	2.5	F	G	N			35-8	99	
Oct.8	63.1	2.9	F	S	N	485		35-9	21	
Oct.8	32.7		J	G	Y	486		35-1	20	
Oct.8	62.9	3.2	F	G	N	487	48	36-1	11	
Oct.8	49.2		M	S	N	488		36-2	21	
Oct.8	65.0	3.2	M	G	N			36-4	21	
Oct.8	61.8	3.15	M	S	N	489	49	36-3	99	
Oct.8	52.0	1.9	M	M	N			36-5	02	
Oct.8	74.1	3.5	F	S	N	490	50	36-6	21	
Oct.8	63.5	2.9	F	G	Y	491	78	36-7	99	
Oct.8	67.9	4.15	F	S	N	492	64	36-8	11	
Oct.8	66.1	4.0	F	S	N	493	96	36-9	21	
Oct.8	64.0	3.4	F	G	N	497	51	36-1	21	
Oct.9	62.8	3.05	F	G	N	498	52	37-1	21	
Oct.9	37.2		J	G	Y	499		37-2	20	
Oct.9	70.4	4.85	M	G	N	501	54	37-3	21	
Oct.9	68.1	3.6	F	G	Y	502	55	37-4	21	
Oct.9	29.1		J	S	N	503				
Oct.14	69.1	4.0	M	S	N	504	58	37-5	21	
Oct.15	54.8	1.9	F	G	N	505		37-6	99	
Oct.15	59.1	2.35	M	G	N	505	60	37-7	02	
Oct.17	70.3	4.1	M	G	N	507		37-8	99	
Oct.18	64.7	3.1	M	M	N			37-9	11	
Oct.18	75.0	5.25	M	R	Y	509	66	37-1	11	
Oct.18	69.0	4.2	F	R	N	512	62	38-1	99	
Oct.18	42.3		J	G	N	514				
Oct.18	63.8	3.5	F	G	N	515		38-2	11	
Oct.18	73.0	4.8	M	R	N	517	72	38-3	21	
Oct.18	33.0		J	S	N	518		38-4	10	
Oct.18	77.4	6.25	M	R	N	519	73	38-5	11	
Oct.19	65.8	3.5	M	R	N	520		38-6	99	

Table 2. (con't)

Date	Length (cm)	Weight (kg)	Sex	Cond	Adip Clip	Tag No.	Radio No.	Scale No.	Age	CWT No.
Oct.19	65.0	3.65	F	G	N	521	62	38-7	21	
Oct.19	67.2	4.15	F	G	N	522		38-8	21	
Oct.26	45.6	1.25	J	G	N	524		39-1	99	
Oct.28	66.6	3.7	F	R	Y	525		39-2	21	
Nov.1	50.4	1.6	M	R	N	526		39-3	20	
Nov.1	69.4	4.1	F	R	N	527		39-4	99	

Overall means:	Females	67.5 cm	3.71 kg
	Males	63.9 cm	3.88 kg
	Jacks	3.13 cm	

[a]=first number refers to freshwater age, second number refers to ocean age.
[b]=99 refers to a scale that could not be aged.

Table 3. Summary of length and weight data for large coho adults from the Lachmach River fence, fall 1989.

Date	N	Mean Length	Range (cm)	N	Mean Weight (kg)	Range (kg)
SEPT. 4	38	64.3	51.5-72.5	37	3.60	1.8-5.4
SEPT. 7	1	72.5	-	1	4.95	-
SEPT. 9	1	66.2	-	1	3.40	-
SEPT. 13	1	60.0	-	1	2.75	-
SEPT. 14	13	64.9	47.1-73.7	13	3.70	1.5-5.8
SEPT. 15	14	62.8	53.1-69.2	14	3.38	1.9-4.3
SEPT. 16	1	62.7	-	1	2.80	-
SEPT. 17	2	75.6	73.6-77.6	2	5.70	4.8-6.6
SEPT. 18	105	64.2	48.2-76.0	57	3.72	1.8-6.2
SEPT. 19	20	64.6	58.0-74.0	8	3.32	1.4-4.2
SEPT. 20	9	66.0	53.8-73.4	6	4.25	3.15-5.05
SEPT. 21	19	65.4	54.2-71.0	19	3.84	2.2-5.4
SEPT. 22	1	74.6	-	1	4.50	-
SEPT. 23	3	66.8	59.4-73.5	3	4.85	4.4-5.7
SEPT. 24	3	69.2	68.0-70.1	3	4.65	4.5-4.94
SEPT. 25	1	70.6	-	1	3.68	-
SEPT. 26	1	60.0	-	1	2.40	-
SEPT. 27	2	66.2	61.2-71.2	1	5.10	-
SEPT. 28	2	65.6	65.3-66.0	2	4.00	3.6-4.4
SEPT. 29	11	69.7	64.1-73.9	10	4.45	3.3-5.5
SEPT. 30	4	63.8	60.1-66.2	4	3.09	2.5-3.5
OCT. 3	1	66.7	-	1	3.85	-
OCT. 6	1	67.1	-	1	4.10	-
OCT. 7	6	66.2	61.8-70.2	6	3.69	2.5-4.75
OCT. 8	11	62.7	52.0-74.1	10	3.23	1.9-4.15
OCT. 9	3	67.1	62.8-70.4	3	3.83	3.05-4.85
OCT. 14	1	69.1	-	1	4.00	-
OCT. 15	2	56.9	54.8-59.1	2	2.12	1.9-2.35
OCT. 17	1	70.3	-	1	4.10	-
OCT. 18	6	70.5	63.8-77.4	6	4.52	3.1-6.25
OCT. 19	3	66.0	65.0-67.2	3	3.77	3.5-4.15
OCT. 28	1	66.6	-	1	3.70	-
NOV. 1	2	59.9	50.4-69.4	2	2.85	1.6-4.1

Table 4. Summary of length data for coho jacks from the Lachmach River fence, fall 1989.

Date	N	Mean Length (cm)	Range (cm)
SEPT. 4	19	31.4	19.4-41.5
SEPT. 7	1	31.8	-
SEPT. 8	3	30.4	29.1-31.8
SEPT. 9	5	29.1	26.2-32.6
SEPT. 10	4	27.9	26.6-29.6
SEPT. 11	1	34.8	-
SEPT. 12	2	30.6	29.9-31.3
SEPT. 13	2	30.4	30.4-30.5
SEPT. 15	2	31.2	29.4-33.0
SEPT. 16	3	29.5	23.2-34.2
SEPT. 17	1	29.0	-
SEPT. 18	32	31.5	23.7-38.2
SEPT. 19	4	31.4	26.7-35.0
SEPT. 20	15	30.9	28.7-36.8
SEPT. 21	18	31.8	24.6-39.9
SEPT. 22	2	29.8	27.6-32.1
SEPT. 23	6	31.3	27.0-33.3
SEPT. 24	1	31.5	-
SEPT. 25	1	31.8	-
SEPT. 26	1	32.0	-
SEPT. 28	6	31.6	28.3-36.4
SEPT. 29	4	35.8	24.0-47.2
OCT. 1	1	34.9	-
OCT. 3	3	33.1	31.3-35.6
OCT. 4	3	31.4	29.7-32.7
OCT. 7	3	31.4	29.1-34.0
OCT. 8	1	32.7	-
OCT. 9	2	33.1	29.1-37.2
OCT. 18	2	37.6	33.0-42.3
OCT. 26	1	45.6	-

Table 5. Summary by sex and age of adult coho from the Lachmach River fall 1989.

Sex	No.	Mean Length (cm)	Mean Weight (kg)	Age
F	14	65.77	3.87	11
F	64	65.50	4.26	21
F	1	53.50	2.20	30a
M	14	63.99	3.63	11
M	3	49.23	1.53	20b
M	43	65.64	3.82	21
M	1	67.70	4.0	31
J	15	30.26		10
J	64	31.80		20

[a]=age unclear may have been 21.
[b]=age unclear may have been 11

Table 6. Fecundity estimates for Lachmach River coho.

Length (cm)	Weight (kg)	Number of eggs
60.0	2.40	2516
61.8	2.50	2640
65.2	3.20	2900
69.7	4.20	3339
Mean = 64.2	Mean = 3.10	Mean = 2849

Table 7. Daily captures of other species from the Lachmach River fence, fall 1989.

Date	Pink Salmon		Dolly Varden		Chum Salmon	
	Daily Total	Cumulative Total	Daily Total	Cumulative Total	Daily Total	Cumulative Total
AUG. 18	12	12	0	0	0	0
AUG. 19	12	24	0	0	0	0
AUG. 20	59	83	0	0	0	0
AUG. 21	400[a]	483	0	0	0	0
SEPT. 1	3	486	0	0	0	0
SEPT. 3	223	699	0	0	0	0
SEPT. 4	87	786	0	0	0	0
SEPT. 5	0	786	0	0	0	0
SEPT. 6	0	786	0	0	0	0
SEPT. 7	33	819	8	8	0	0
SEPT. 8	35	854	8	16	0	0
SEPT. 9	18	872	9	25	1	1
SEPT. 10	0	872	5	30	0	1
SEPT. 11	1	873	3	33	0	1
SEPT. 12	6	879	2	35	0	1
SEPT. 13	5	884	1	36	0	1
SEPT. 14	84	968	2	38	0	1
SEPT. 15	88	1056	0	38	0	1
SEPT. 16	54	1110	1	39	1	2
SEPT. 17	43	1153	1	40	1	3
SEPT. 18	84	1237	20	60	3	6
SEPT. 19[b]	15	1252	0	60	0	6
SEPT. 20[c]	12	1264	7	67	1	7
SEPT. 21	123	1387	20	87	10	17
SEPT. 22	28	1415	38	125	0	17
SEPT. 23	18	1433	24	149	0	17
SEPT. 24	16	1449	11	160	2	19
SEPT. 25	6	1455	11	171	0	19
SEPT. 26	0	1455	4	175	7	26
SEPT. 27	1	1456	0	175	1	27
SEPT. 28[d]	2	1458	19	194	2	29
SEPT. 29	1	1459	7	201	4	33
SEPT. 30	2	1461	118	319	8	41
OCT. 1	3	1464	87	406	0	41
OCT. 2	1	1465	193	599	1	42
OCT. 3	0	1465	87	586	0	42
OCT. 4	1	1466	23	709	1	43
OCT. 5	0	1466	10	719	0	43
OCT. 6	2	1468	27	746	0	43
OCT. 7	0	1468	7	753	0	43
OCT. 8	0	1468	7	760	1	44
OCT. 9	0	1468	5	765	1	45
OCT. 10	0	1468	1	766	1	46
OCT. 11	0	1468	3	769	1	47
OCT. 12	0	1468	3	772	0	47

Table 7. (cont.)

Date	Pink Salmon		Dolly Varden		Chum Salmon	
	Daily Total	Cumulative Total	Daily Total	Cumulative Total	Daily Total	Cumulative Total
OCT. 13	0	1468	0	772	0	47
OCT. 14	0	1468	14	786	1	48
OCT. 15	0	1468	1	787	5	53
OCT. 16	0	1468	4	791	0	53
OCT. 17	0	1468	1	792	0	53
OCT. 18	0	1468	4	796	0	53
OCT. 19	0	1468	0	796	1	54
OCT. 20	0	1468	1	797	0	54
OCT. 21	0	1468	0	797	0	54
OCT. 22	0	1468	0	797	0	54
OCT. 23	0	1468	0	797	0	54
OCT. 24	0	1468	0	797	0	54
OCT. 25	0	1468	0	797	0	54
OCT. 26	0	1468	1	798	0	54
OCT. 27	0	1468	0	798	0	54
OCT. 28	0	1468	2	800	0	54
OCT. 29	0	1468	0	800	0	54
OCT. 30	0	1468	0	800	0	54
OCT. 31	0	1468	1	801	0	54
NOV. 1	0	1468	3	804	0	54

[a]=estimated number of pinks passing the fence after it was opened on Aug. 21.
[b]=an unknown number of fish passed over the fence uncounted during the flood event of Sept. 19.
[c]=an unknown number of fish passed over the fence uncounted during the flood event of Sept. 20.
[d]=an unknown number of fish passed over the fence uncounted during the flood event of Sept. 28.

Table 8. Radio tracking data from the Lachmach River, fall 1989.

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
47	.921	F	Sept. 4	Sept. 16-18	0		
				Sept. 20-Oct.5	2000		
				Oct. 6-10	3390		
				Oct. 11	3820		
				Oct. 12-20	3390		
				Oct. 20-26	3600		lost in
				Oct. 28-Nov.22	3820	No	stump 3820m
30	.581	M	Sept. 7	Sept. 8	0		
				Sept. 9-18	500		
				Sept. 20-30	2000		
				Oct. 1	2600		
				Oct. 2	2300		
				Oct. 3-10	2600		
				Oct. 10-12	3390		
				Oct. 16-26	3820		
				Oct. 29-Nov.2	3390		
				Nov. 4-5	3820		lost in live
				Nov. 6-22	4500	No	fish at 4740m
36	.702	M	Sept. 14	Sept. 14-18	0		
				Sept. 20-30	2000		
				Oct. 1-5	2600		
				Oct. 6-9	3820		
				Oct. 10-Nov.1	5000		
				Nov. 4-20	4800	yes	on bank 4800m
3	.039	F	Sept.18	Not Tracked		yes	on bank 2000m
4	.058	F	Sept. 19	Sept. 20-Oct. 8	2000		
				Oct. 9	1000		
				Oct. 10-13	0	yes	on bank 2000m
5	.076	F	Sept. 18	Sept. 20-29	2000		
				Sept. 30-Oct. 5	3390		
				Oct. 10	5000		
				Oct. 11-15	6000		
				Oct. 16-20	5000		
				Oct. 20-26	5500		
				Oct. 29	4700		
				Nov. 1-11	5000	yes	in pond 5500m
6	.098	F	Sept. 18	Sept. 20-22	2000		
				Sept.23	3820		
				Sept. 24-Oct.16	3390	no	lost contact

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
9	.157	F	Sept. 18	Sept. 20-28	0		
				Sept. 29-30	4000		
				Oct. 1	4200		
				Oct. 2-5	3820	no	lost contact
7	.118	M	Sept. 18	Sept. 20-25	500		
				Sept. 27	600		
				Sept. 28	500		
				Sept. 29-Oct. 11	0		
				Oct. 12	393		
				Oct.14	200	yes	on bank 200m
14	.262	F	Sept. 18	Sept. 20-29	2000		
				Sept. 30-Oct. 2	500	yes	in carcass 500m
13	.241	F	Sept. 18	Sept. 20	100		
				Sept. 21-Oct. 1	0	yes	in carcass 0m
10	.178	F	Sept. 29	Sept. 30-Oct. 1	2000		
				Oct. 2-5	2600		
				Oct. 6-10	3390		
				Oct. 11-20	2600		
				Oct. 20-26	3820	no	lost contact
8	.139	F	Sept. 19	Sept. 20	0		
				Sept. 21-25	500		
				Sept. 26-27	2000		
				Sept. 28	2600		
				Sept. 29-30	5000		
				Oct. 1-Nov.2	3820		
				Nov. 4-Nov.20	5500	yes	on bank 5500m
12	.221	F	Sept. 19	Sept. 20-23	2000		
				Sept. 24-26	2600		
				Sept. 27-28	2000		
				Sept. 29-Oct. 29	3820		
				Nov. 1-11	4500	yes	on bank 3820m

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
15	.282	M	Sept. 19	Sept. 20	1500		
				Sept. 21-22	2000		
				Sept. 23	3820		
				Sept. 24	3390		
				Sept. 25	3100		
				Sept. 26	3000		
				Sept. 27-29	2600		
				Sept. 30	3000		
				Oct. 1-16	2600		
				Oct. 20	3390		
				Oct. 21-26	2600		
				Oct. 29	3390		
				Nov. 1-22	2600	no	lost in a tree 2600 m
16	.301	M	Sept. 19	Sept. 20-25	300		
				Sept. 26-Oct. 14	500	yes	in carcass 500m
19	.361	F	Sept. 19	Sept. 20-28	0		
				Sept. 29-30	2000		
				Oct. 1	2600		
				Oct. 2-5	2000		
				Oct. 6-11	3390		
				Oct. 12	500	yes	on bank 330m
25	.481	F	Sept. 20	Sept. 21-Oct.3	0		
				Oct. 4	500		
				Oct. 5-10	0		
				Oct. 11-16	500		
				Oct. 17	0	yes	in carcass 0m
21	.401	F	Sept. 20	Sept. 21-28	0		
				Sept. 29-30	2000		
				Oct. 1-4	2600		
				Oct. 5-12	3390		
				Oct. 16	3820		
				Oct. 20	3000		
				Oct. 21-23	3820		
				Oct. 24-29	3390		
				Nov. 1-2	3820		
				Nov. 4-11	5000	no	in live fish 5000 m

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
22	.420	M	Sept. 20	Sept. 21	500		
				Sept. 22	2000		
				Sept. 23	3000		
				Sept. 24-28	3390		
				Sept. 29-30	3820		
				Oct. 1	4200		
				Oct. 2-3	3820		
				Oct. 4	3390		
				Oct. 5	2600		
				Oct. 6-12	3390		
				Oct. 16	3000		
				Oct. 20-Nov. 2	3390		
				Nov. 3-11	3000	no	
27	.521	M	Sept. 21	Sept. 22-Oct. 3	0		
				Oct. 4-5	2600	no	lost contact
31	.601	F	Sept. 21	Sept. 22-23	2000		
				Sept. 24-28	3390		
				Sept. 29	4700		
				Sept. 30	4200		
				Oct. 1-4	3820		
				Oct. 5	4400		
				Oct. 6-16	3820		
				Oct. 26	4500	yes	on bank 4500m
32	.622	F	Sept. 21	Sept. 22	500		
				Sept. 23-26	2000		
				Sept. 27	2600		
				Sept. 29-Oct. 7	2000		
				Oct. 8-9	3390		
				Oct. 10-16	3820		
				Oct. 29-Nov. 9	3390	yes	on bank 3390m
38	.741	F	Sept. 21	Sept. 22	0		
				Sept. 23	700		
				Sept. 24	500		
				Sept. 25	600		
				Sept. 26	800		
				Sept. 27-28	1000		
				Sept. 29-Oct. 4	2600		
				Oct. 5	1000		
				Oct. 6-16	2000		
				Oct. 20-26	1000		
				Oct. 29-Nov. 6	2000		
				Nov. 8-22	1500	yes	on bank 1500m

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
40	.810	M	Sept. 21	Sept. 22	1000		
				Sept. 23-25	2000		
				Sept. 26	3390		
				Sept. 27-29	2000		
				Sept. 30-Oct. 15	2600	yes	on bank 2500m
42	.821	M	Sept. 21	Sept. 22	0		
				Sept. 23-25	700		
				Sept. 26-28	2600		
				Sept. 29-Oct. 1	2000		
				Oct. 2-5	2600		
				Oct. 6-9	1500		
				Oct. 10-11	500		
				Oct. 12	700		
				Oct.16	1000	yes	on bank 1100m
43	.842	F	Sept. 21	Sept. 22	500		
				Sept. 23-25	0		
				Sept. 26-27	500		
				Sept. 28-30	0		
				Oct. 1-3	500		
				Oct. 3	0		
				Oct. 4-7	500		
				Oct. 8-12	700		
				Oct. 16	500		
				Oct. 20	800		
				Oct. 21-24	1000		
				Oct. 25	1000	yes	on bank 1000m
10	.178	M	Sept. 19	Sept. 20-25	500	yes	in carcass 500m
11	.201	M	Sept. 29	Sept. 30	0		
				Oct. 1-5	2600		
				Oct. 6-12	3390		
				Oct. 16	2600		
				Oct. 20-Nov. 11	600	no	lost on bank 600 m
17	.320	M	Sept. 30	Oct. 1-3	0		
				Oct. 4	2600		
				Oct. 5	2000		
				Oct. 6-9	2400		
				Oct. 10	1200		
				Oct. 11	3820		
				Oct. 12-Nov. 11	1000	no	

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
28	.541	F	Sept. 30	Oct. 1-4	0		
				Oct. 5	1000		
				Oct. 6-12	500	yes	in carcass 500m
35	.682	F	Oct. 3	Oct. 4-24	2000		
				Oct. 25	500		
				Oct. 30	10	yes	in carcass 10m
37	.721	F	Oct. 7	Oct. 6-9	2400		
				Oct. 10	2000		
				Oct. 11-16	2600		
				Oct. 20-26	3390	yes	on bank 2000m
39	.760	F	Oct. 7	Oct. 9-11	500		
				Oct. 12-15	700		
				Oct. 16-Nov. 21	2000	yes	on bank 2000m
45	.880	F	Oct. 7	Oct. 9	3390		
				Oct. 10-12	3820		
				Oct. 16	3000		
				Oct. 20-29	5000		
				Nov. 1-2	5500		
				Nov. 4-11	7000	yes	on bank 7000m
46	.902	M	Oct. 7	Oct. 9	500	no	lost contact
48	.940	F	Oct. 8	Oct. 9	0		
				Oct. 10-11	500		
				Oct. 12	700		
				Oct. 13-16	1000		
				Oct. 20-23	2600		
				Oct. 24-26	2000		
				Oct. 29-Nov.23	500	yes	on bank 600m
49	.962	M	Oct. 8	Oct. 9	500		
				Oct. 10-11	2000		
				Oct. 12-16	2400		
				Oct. 20-Nov. 3	0	no	washed over fence Nov.3
50	.981	F	Oct. 8	Oct. 9	1000		
				Oct. 10-26	2000		
				Oct. 29	800	yes	in carcass below fence

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
78	151.540	F	Oct. 8	Oct. 9	0		
				Oct. 10-Nov. 6	2000		
				Nov. 8-11	1000	yes	on bank 2200m
64	151.259	F	Oct. 8	Oct. 9	500		
				Oct. 10-11	1000	no	
96	.902	F	Oct. 8	Oct. 9-29	2000		
				Nov. 1-2	1500		
				Nov. 4-6	1000		
				Nov. 8-11	500	yes	on bank
51	.001	F	Oct. 8	Oct. 9	500		
				Oct. 10-16	2000	yes	0m
52	.021	F	Oct. 9	Oct. 10-21	2000	yes	on bank 2000m
54	.062	M	Oct. 9	Oct. 10	0		
				Oct. 11	500		
				Oct. 12	700		
				Oct. 16	0	yes	on bank 0m
55	.079	F	Oct. 9	Oct. 10	0		
				Oct. 11	500		
				Oct. 12-16	1000		
				Oct. 17	500		
				Oct. 20-23	1000		
				Oct. 24-26	2000		
				Oct. 29	1000		
				Nov. 1-6	500	yes	on bank 100m
58	.141	M	Oct. 14	Oct. 15-16	1000		
				Oct. 20-Nov. 6	2000		
				Nov. 8-11	1000	no	in live fish 2000m
60	.121	M	Oct. 15	Oct. 16	0		
				Oct. 20-26	1000	yes	on bank 0m
66	.300	M	Oct. 18	Oct. 20-26	500	yes	on bank 500m

Table 8. (con't)

Tag No.	Freq (154 MHz)	Sex	Date Tagged	Tracking Dates	Tag Location	Tag Recovered	Comments
62	.222	F	Oct. 19	Oct. 20	500		
				Oct. 21-24	1000		
				Oct. 25-Nov. 6	2000		
				Nov. 8-11	1000	no	in stump 100m
72	.422	M	Oct. 18	Oct. 20-Nov. 6	2000		
				Nov. 8-11	1000	yes	on bank 700m
73	.441	M	Oct. 18	Oct. 20-Nov. 11	2000	no	lost at 2000m

Table 9. Juvenile coho marking, Lachmach River fall 1989.

Location	Mark Type	No. Marked
500	RVLM	136
2000	LVRM	224
2600	LVLM	322
3820	LV	696
4500	RVRM	356
5000	RV	757
7000	RM	286
	Total Marked	2777

RM = right maxillary clip
LM = left maxillary clip
RV = right ventral clip
LV = left ventral clip

Table 10. Summary of mark recoveries from juvenile coho trapping in the Lachmach River Oct. 30 - Nov. 10, 1989.

Location	Number Caught	Marks Recovered	Number	Mark Origin
500m mainstem	16	RVRM	1	4500 m
		LV	1	3820 m
		RVLM	1	500 m
500 m backchannel	50	RMLV	1	2000 m
		RM	1	7000 m
		RVLM	1	500 m
2000 m mainstem	150	RMLV	16	2000 m
		LMLV	2	2600 m
		LV	2	3820 m
		RMRV	1	4500 m
2600 m mainstem	177	LMLV	25	2600 m
		RMRV	2	4500 m
3390 m backchannel (upper area)	177	no marks found		
3390 m backchannel	285	RV	1	5000 m
3390 m mainstem (lower area)	386	LV	1	3820 m
3820 m mainstem	386	LV	66	3820 m
		RMRV	5	4500 m
4500 m mainstem	180	RMRV	40	4500 m
		RV	1	5000 m
5000 m pond	139	RV	36	5000 m
		LMRV	1	500 m
7000 m pond	117	RM	30	7000 m
Fence area (0 m)	66	RMLV	2	2000 m
Total	2129	Total	237	

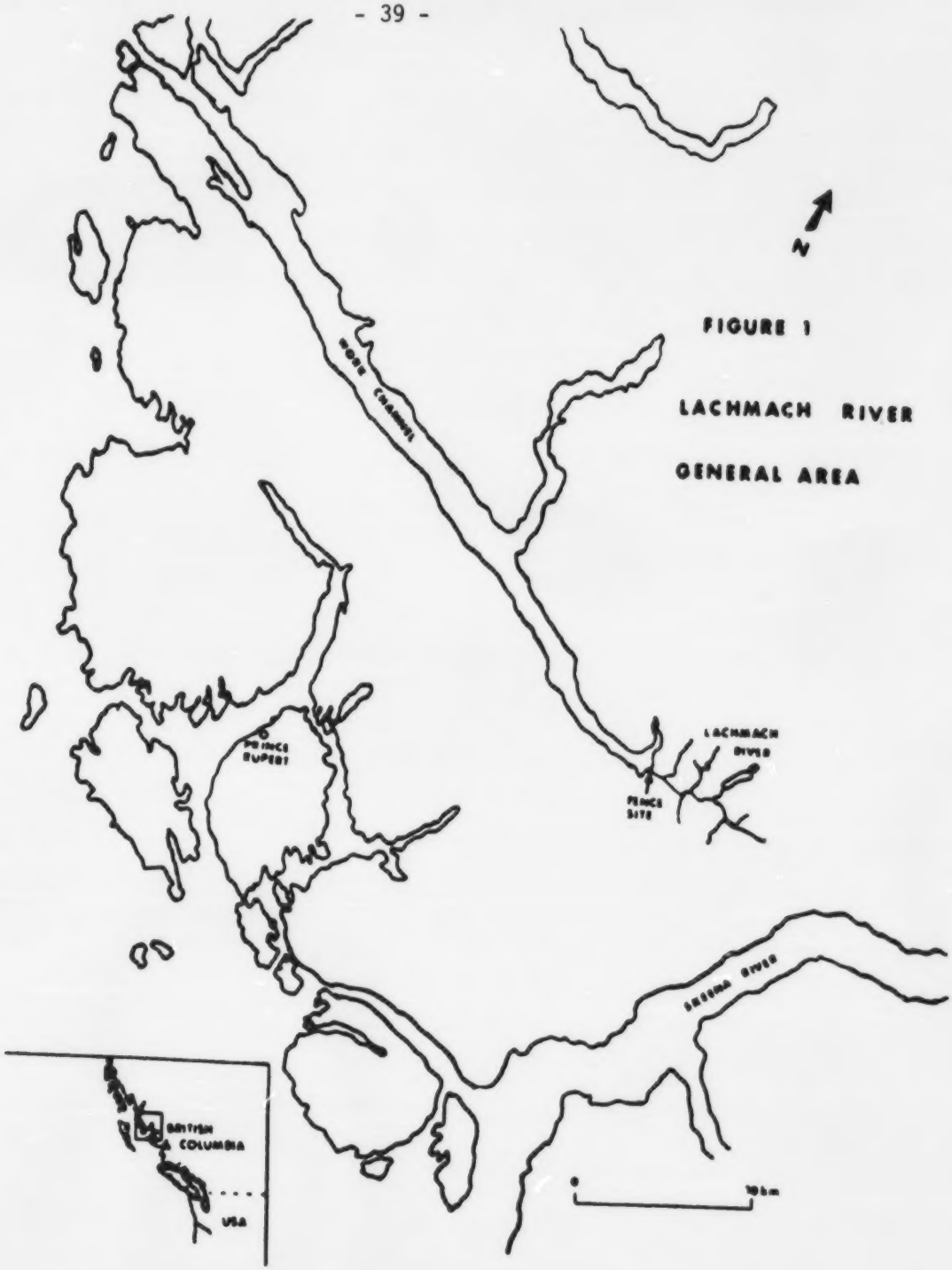


FIGURE 1

LACHMACH RIVER

GENERAL AREA

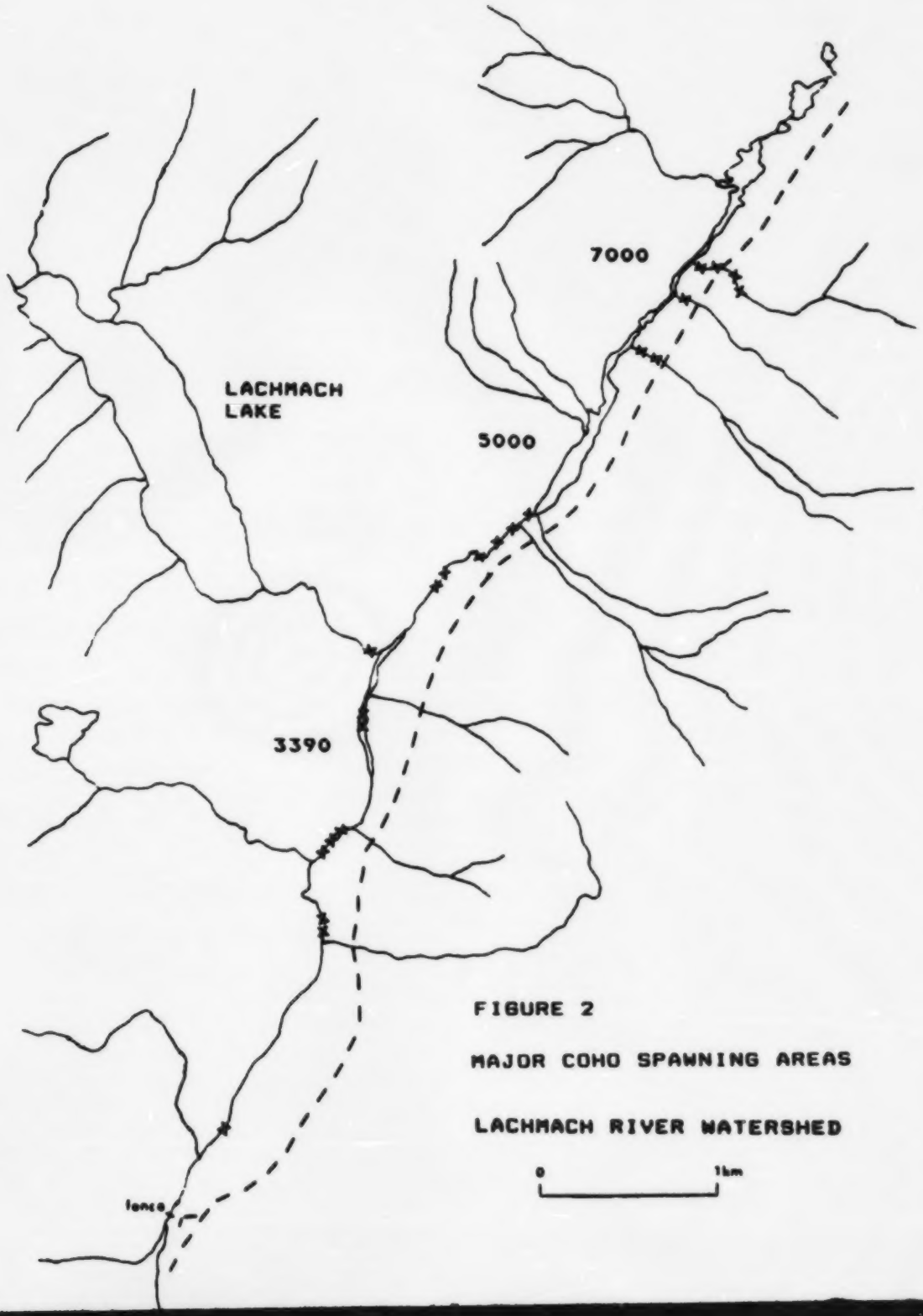


FIGURE 2

MAJOR COHO SPAWNING AREAS

LACHMACH RIVER WATERSHED

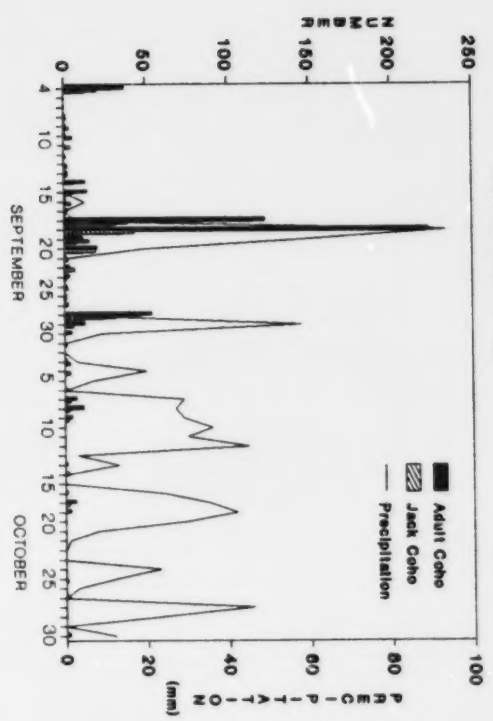


Figure 3. Daily captures of adult coho
Lachmach River fall 1989.

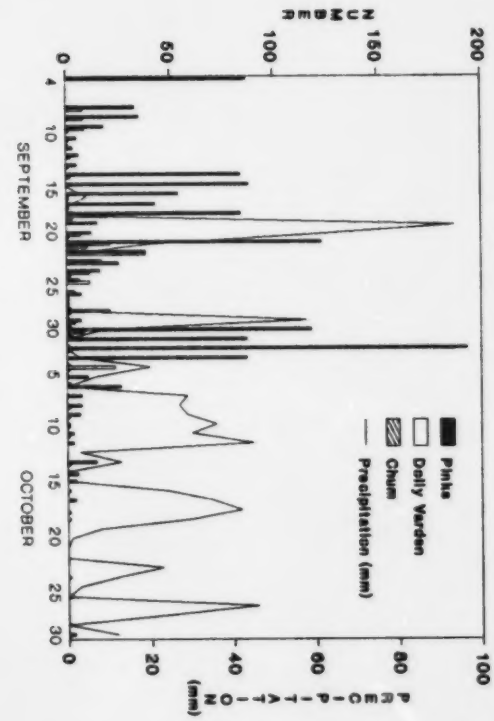


Figure 4. Daily captures of other species
Lachmach River fall 1989.

Figure 5. Daily precipitation Lachmach River fall 1989.

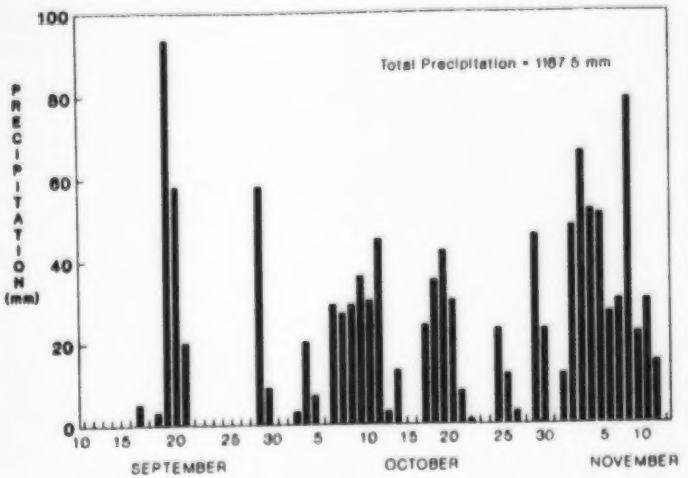


Figure 6. Daily maximum and minimum water temperatures Lachmach River fall 1989.

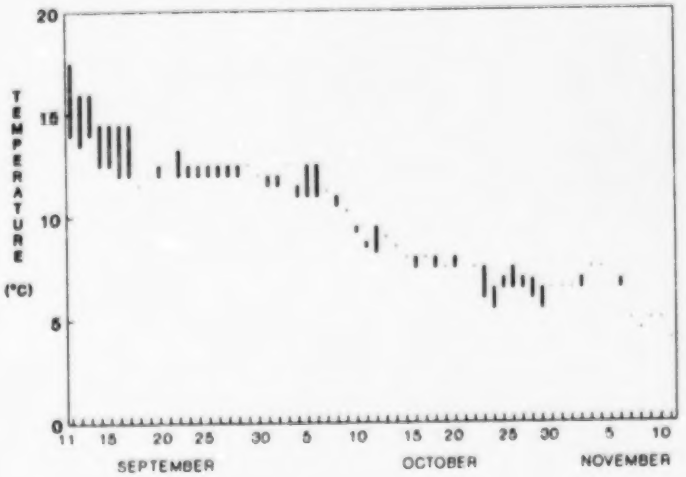
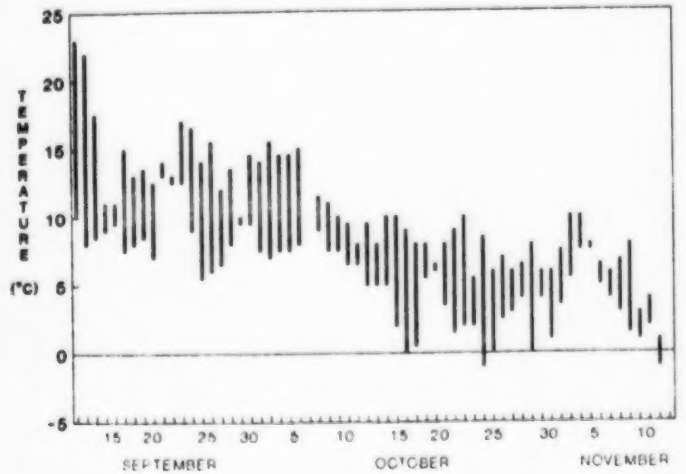


Figure 7. Daily maximum and minimum air temperatures Lachmach River fall 1989.



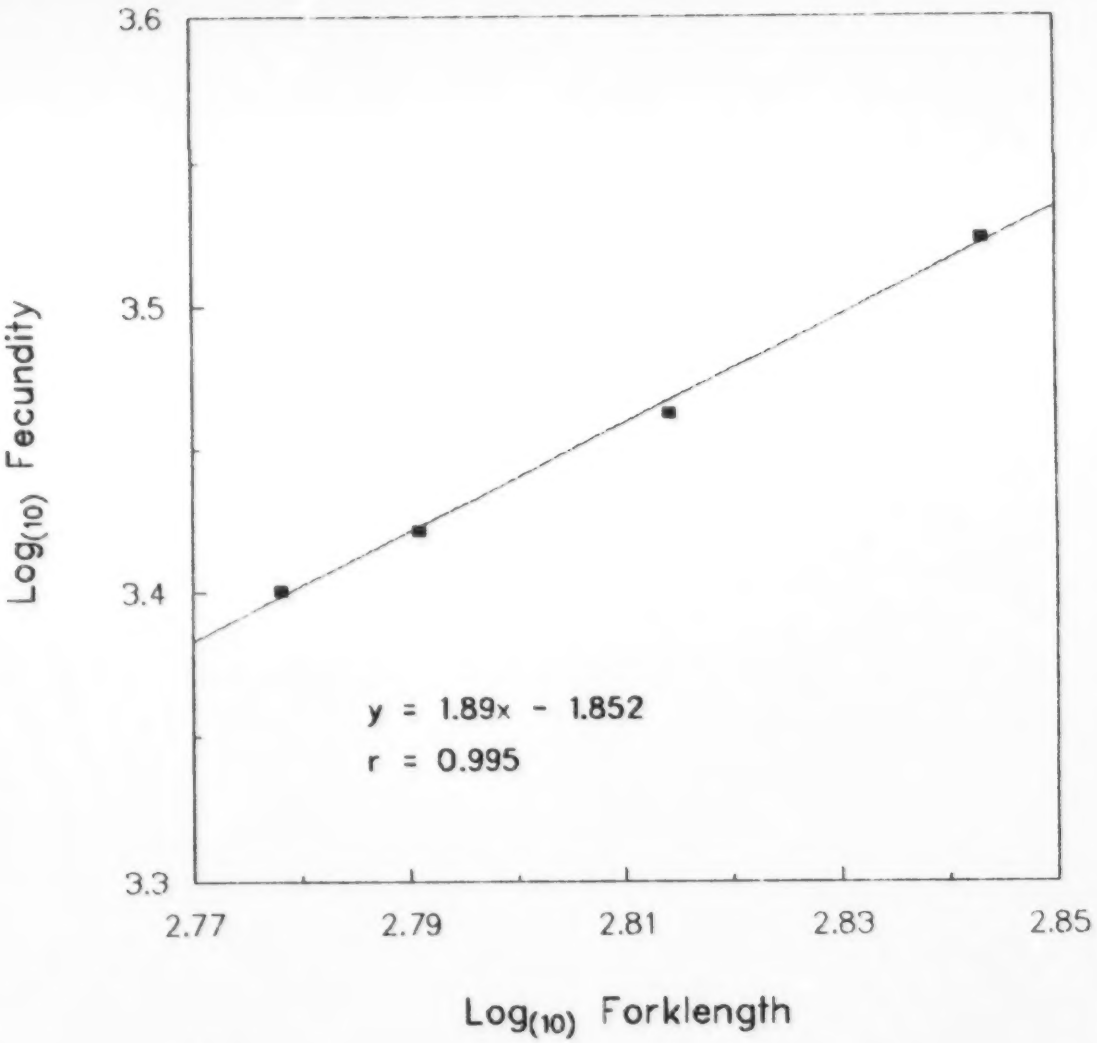


Figure 8. $Log_{(10)}$ - $log_{(10)}$ regression of fecundity and forklength for adult female coho, Lachmach River fall 1989.

Figure 9. Length frequency of juvenile coho 500 m area Lachmach River September 1989.

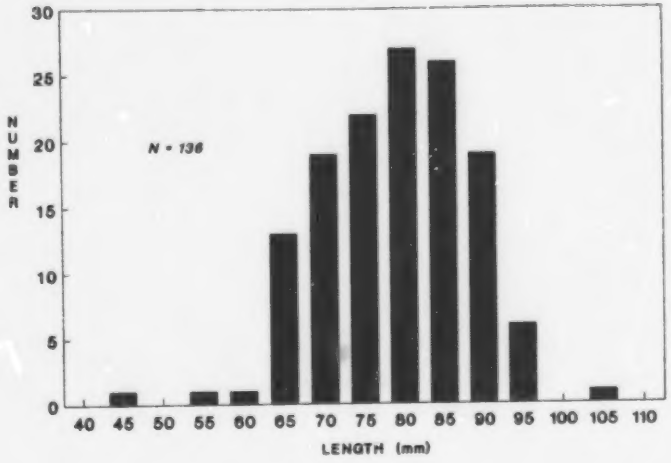


Figure 10. Length frequency of juvenile coho 2000 m area Lachmach River September 1989.

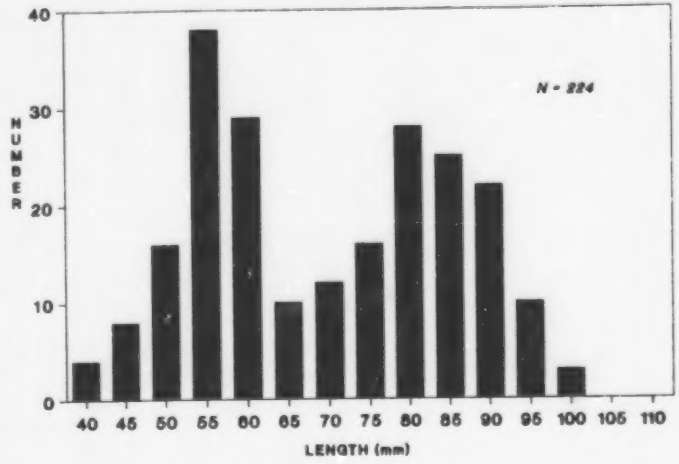


Figure 11. Length frequency of juvenile coho 2600 m area Lachmach River September 1989.

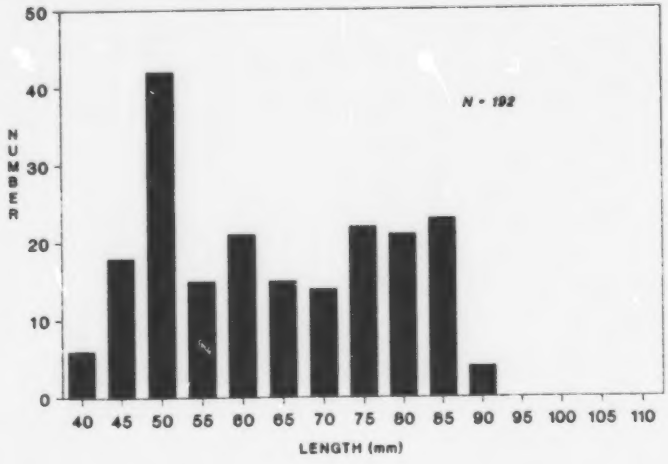


Figure 12. Length frequency of juvenile coho 3820 m area Lachmach River September 1989.

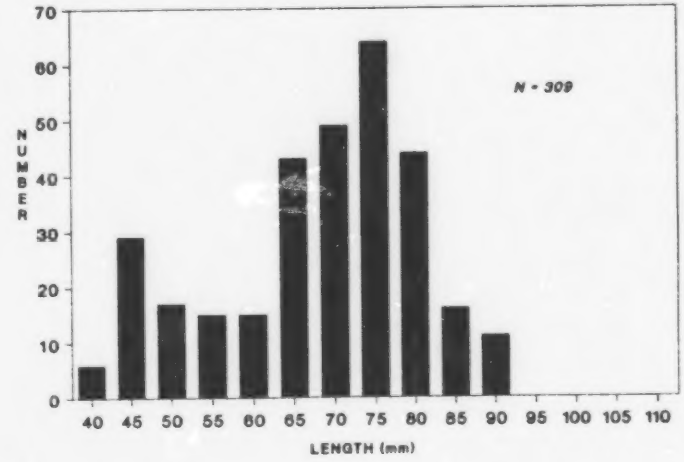


Figure 13. Length frequency of juvenile coho 4500 m area Lachmach River September 1989.

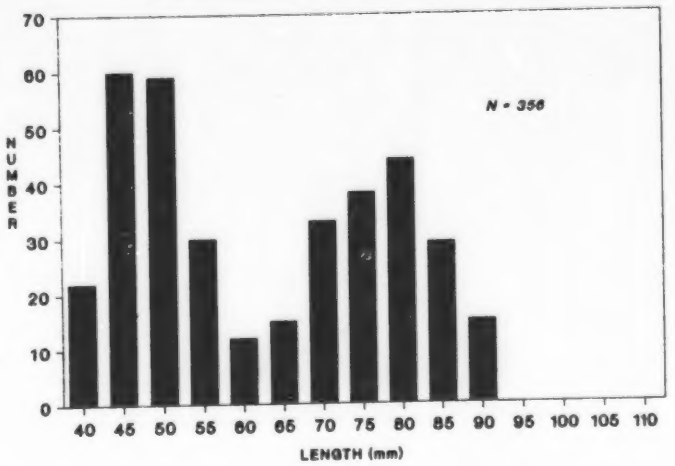


Figure 14. Length frequency of juvenile coho 6000 m area Lachmach River September 1989.

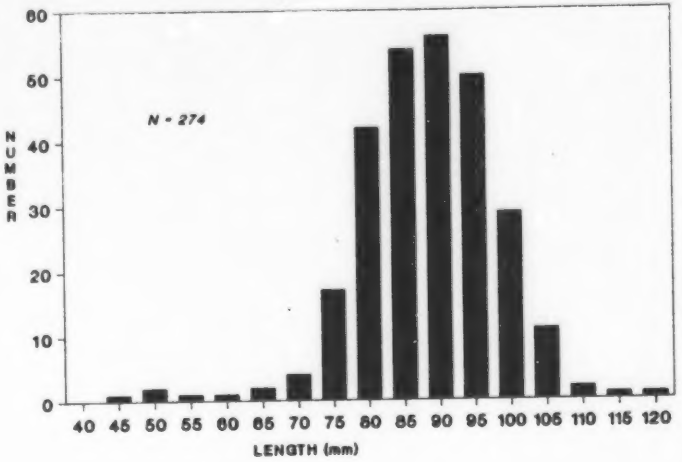
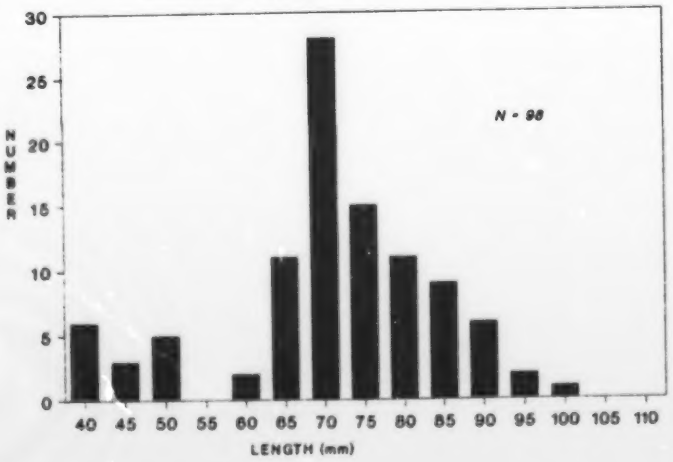


Figure 15. Length frequency of juvenile coho 7000 m area Lachmach River September 1989.



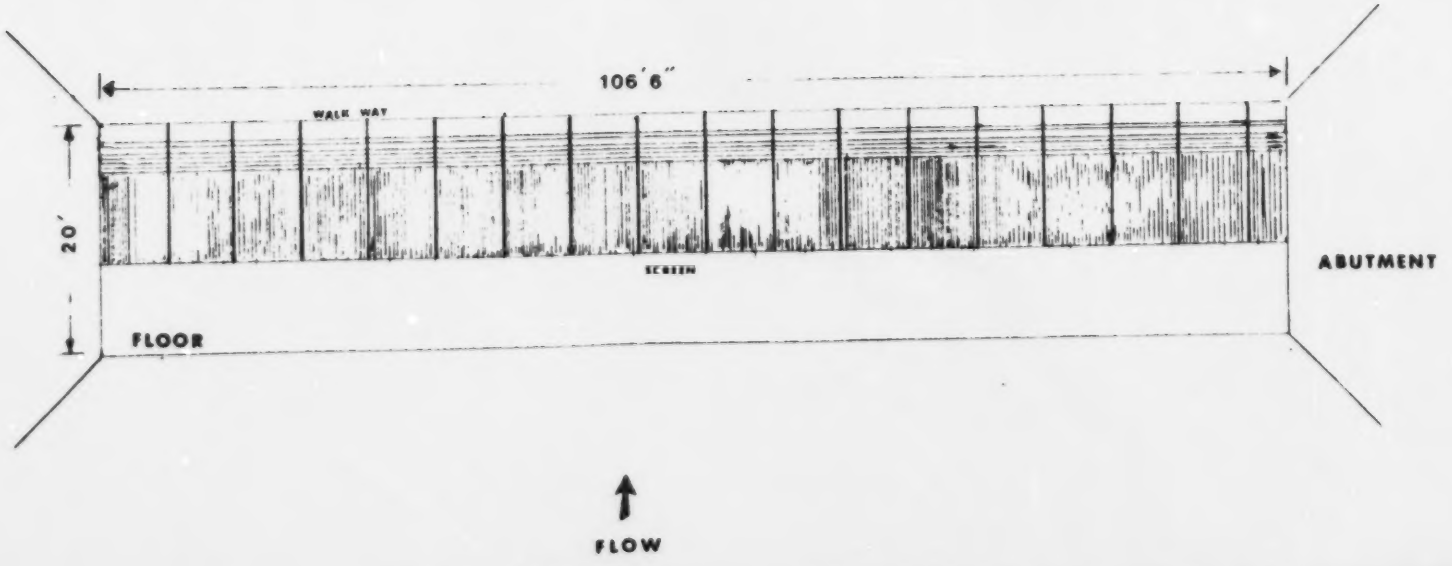
APPENDIX A

LACHMACH RIVER ADULT SALMON COUNTING FENCE

Note: All drawings have been reduced from 11 x 17 inch.

LACHMACH RIVER COUNTING FENCE GENERAL ARRANGEMENT
AERIAL VIEW

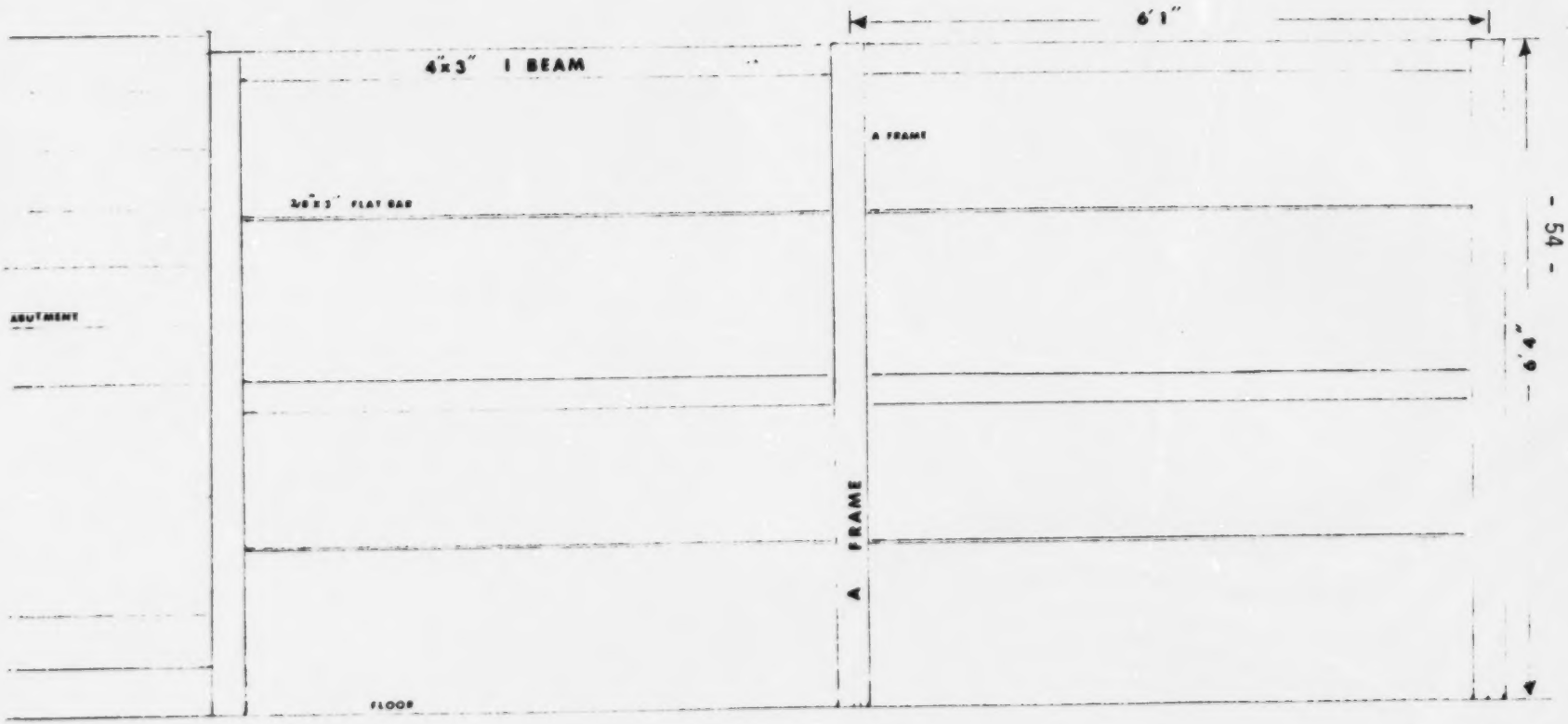
SCALE 1" = 10 FT.

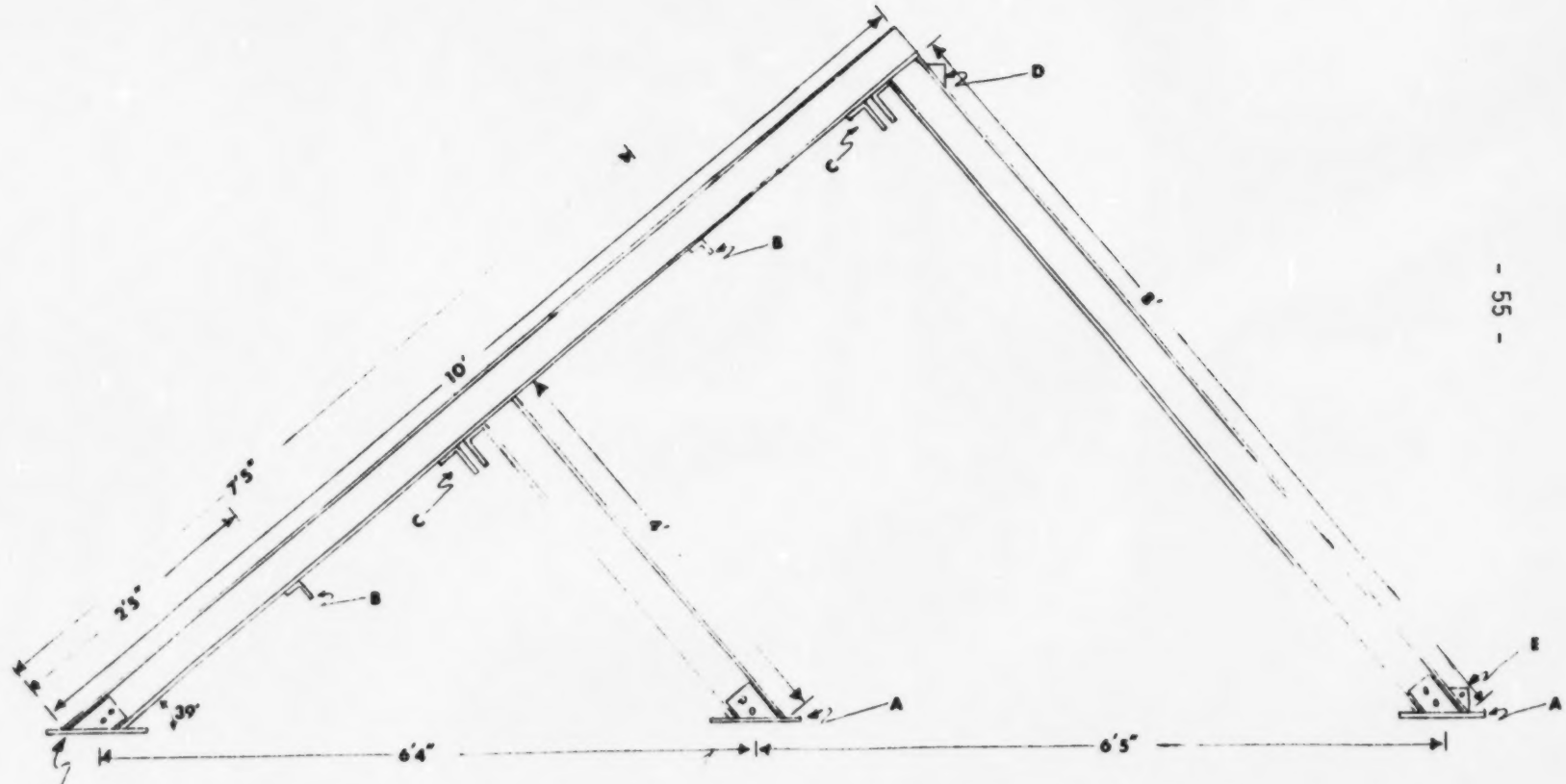


LACHMACH RIVER COUNTING FENCE GENERAL ARRANGEMENT
FRONT VIEW

SCALE 1" = 1 FT.

screens not shown for clarity





DETAIL A

STANDARD A - FRAME: 19 REQUIRED

USE 6351 T6 4 0 3 I BEAM SHAPE NUMBER 28004.
WELDED AS A ONE PIECE UNIT.
ALL WELDS TO BE CONTINUOUS

SCALE 1" = 1 FT.